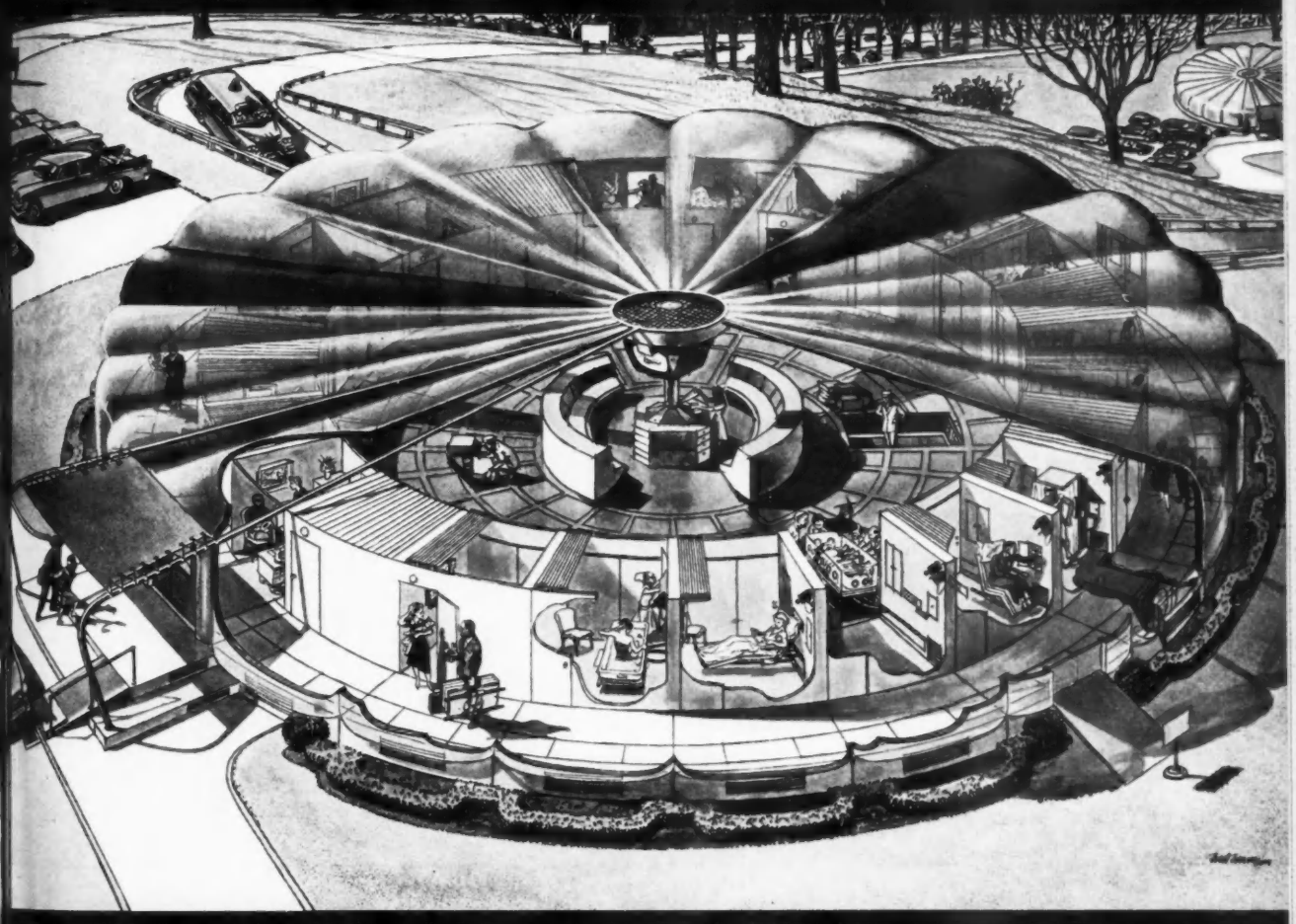
MEDICAL WORLD NEWS

SEPTEMBER 29, 1961



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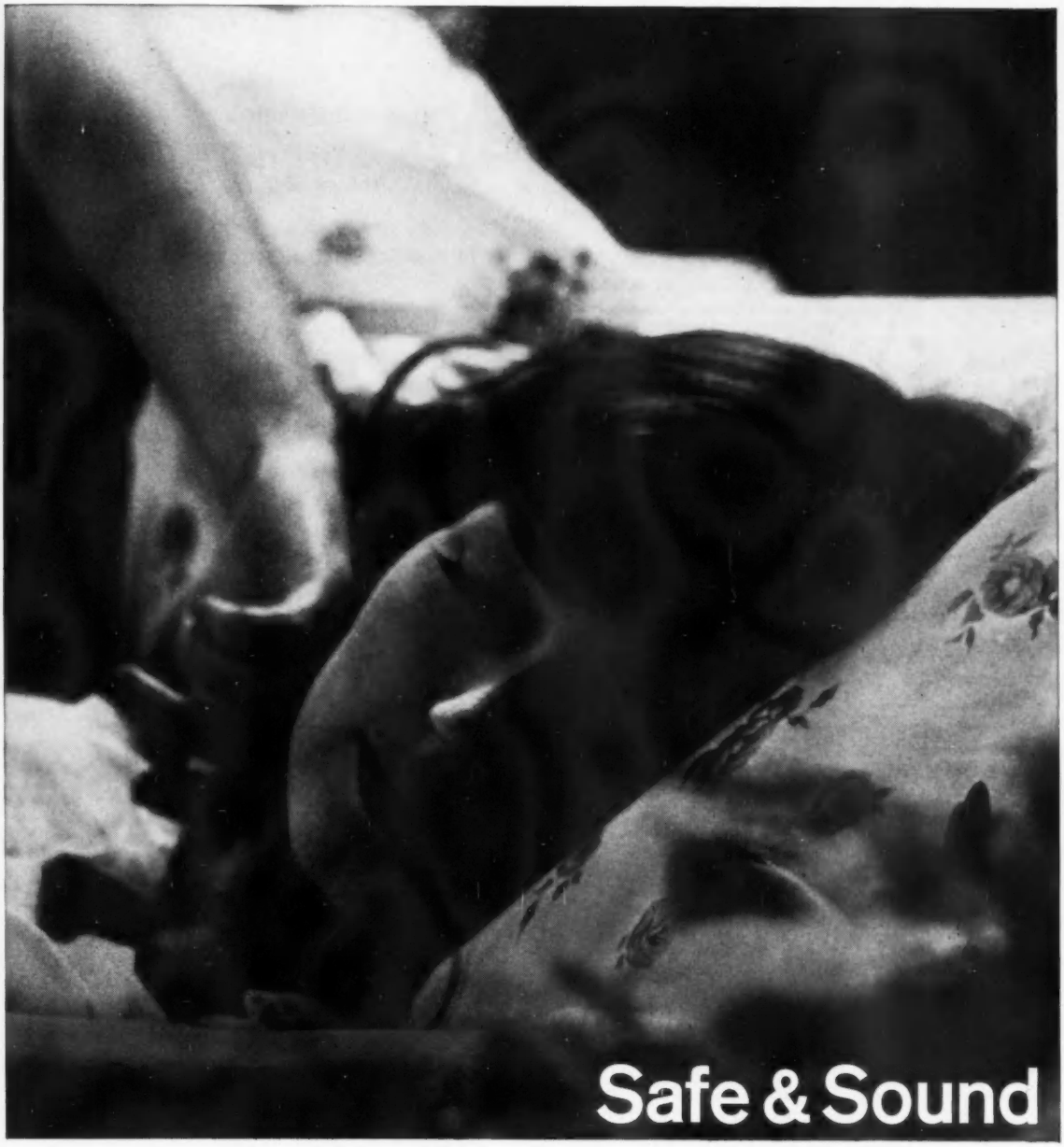

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References: 1. Blumberg, N., Everts, E. A., and Goracci, A. F.: Pennsylvania M. J. *59*:808 (July) 1956. 2. Matlin, E.: M. Times *84*:68 (Jan.) 1956. 3. Hodge, J., Sokoloff, M., and Franco, F.: Am. Pract. & Digest Treat. *10*:473 (March) 1959. 4. Burros, H. M., and Borromeo, V. H. J.: J. Urol. *76*:456 (Oct.) 1956. 5. Lane, R. A.: New York J. Med. *55*:2343 (Aug. 15) 1955.

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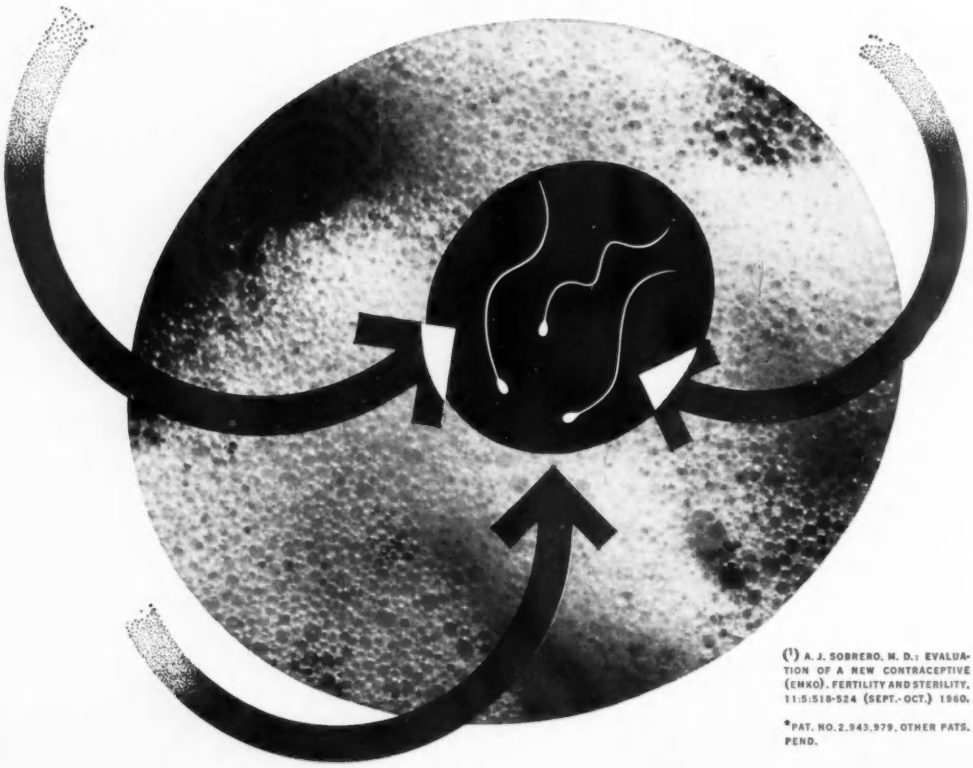

(1) A. J. SOBRERO, M. D.: EVALUATION OF A NEW CONTRACEPTIVE (EMKO). FERTILITY AND STERILITY, 11:5:518-524 (SEPT.-OCT.) 1960.

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VOL. 2, NO. 20

MEDICAL WORLD NEWS

THE NEWSMAGAZINE OF MEDICINE

SEPTEMBER 29, 1961

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MEDICAL WORLD NEWS is published bi-weekly by Medical World Publishing Company, Inc., 30 Rockefeller Plaza West, New York 20, N. Y. Controlled circulation postage paid at New York, New York. Subscription rates: $12.50 per year to non-professionals; $6.00 to non-qualifying physicians or persons in allied professions; $15 for foreign subscriptions; single copies, 60 cents. Copyright 1961 by Medical World Publishing Company, Inc. All rights reserved. Reproduction without specific permission is prohibited. **Change of address:** Notification should be sent to Medical World News, 30 Rockefeller Plaza West, New York 20, N. Y. Please give both old and new addresses, including zone numbers, if any. Printed in U.S.A. **Postmaster:** Please send form 3579 to Medical World Publishing Company, Inc., 30 Rockefeller Plaza West, New York 20, N. Y.

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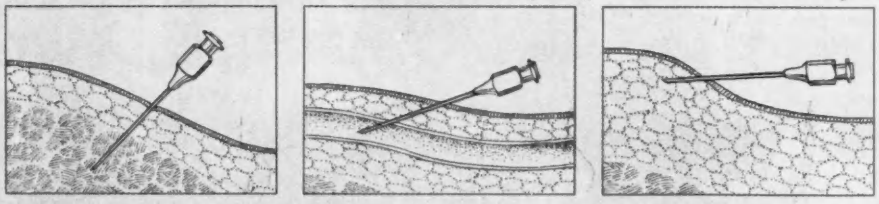

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LATE NEWS

HYPERPLASIA OF CERVIX CALLED A Ca DANGER SIGN

Atypical hyperplasia of the uterine cervical epithelium, if left untreated "has a definite cancerogenic potential," a Louisiana specialist told the First International Congress of Exfoliative Cytology, in Vienna.

Follow-up studies of 293 patients at the New Orleans Charity Hospital show that the disease was associated with malignancy in 21 per cent, while another three per cent subsequently developed carcinomas of various types, says Dr. Cary M. Dougherty, of Louisiana State University.

In 25 per cent of the women the hyperplasis persisted as such, while in 51 per cent it regressed spontaneously or following local excision. But these figures, he believes, exaggerate the likelihood of avoiding malignancy in untreated cases. "Our method of management of patients with atypical epithelial hyperplasia does not allow opportunity to observe the natural course of this condition. Only in patients who absented themselves from the clinic for prolonged periods was the evolution near natural—into malignancy."

FOREIGN DOCTORS IN U. S. INCREASING, NOT DECREASING

Tougher educational requirements for admission of foreign MDs to U.S. training programs have not reduced the number of incoming doctors. In fact, the number increased by five per cent during 1960-61, the American Medical Association reports.

According to the AMA's Council on Medical Education and Hospitals, foreign graduates totaled 9,935 as against 9,457 in 1959-60. They filled 26 per cent of 1960-61 internships and residencies—a one per cent rise over the preceding year. The increase was due solely to a larger number of residents; foreign-filled internships, in fact, dropped by 792. But this decrease "is likely to be only temporary," says the AMA. Results of the April examinations by the Educational Council for Foreign Medical Graduates show that 1,673 candidates for internship were certified directly from abroad. "If the same or a greater number is certified after this October's examinations, then the previous total will be equaled or exceeded."

The AMA Council also surveyed stipends for interns as they affect recruitment of American medical students. It finds that stipends increased in 1960-61 to $178 (up seven per cent) in hospitals affiliated with medical schools, and $219 (up five per cent) in nonaffiliated hospitals. But these increases are still too small: "Some major changes are in order if medicine is to maintain an effective competitive posture in the national recruitment tug-of-war."

PHOTOCHEMICAL TECHNIQUE PURIFIES POLIO VACCINES

Only a few weeks ago, two pharmaceutical firms had to shut down production of Salk vaccine because of contamination by vagrant monkey viruses (MWN Aug. 18). A new adaptation of an old biochemical technique may provide a simple and effective means of eliminating the unwanted visitors.

The new process combines "photodynamic inactivation" — a principle

first reported in 1898 — with trace amounts of the dye toluidine blue. According to the U. S. Public Health Service, it could have "an important application to the manufacture of live poliomyelitis vaccine."

Dr. C. W. Hiatt, of the PHS Division of Biologic Standards, finds that some animal viruses, by combining with the dye, become sensitized to light; others, including polio virus, do not. To purify vaccine cultures, he adds a minute quantity of the dye, then pumps the culture through a glass coil surrounding a brilliant incandescent bulb. The light knocks out the photosensitized virus, leaving the polio virus intact.

The method, says Dr. Hiatt, inactivates five of the 40-odd simian viruses found in monkey kidney tissue cultures—including the SV 40 strain responsible for the recent halt in Salk vaccine production. Other simian viruses have been found resistant to the treatment.

Serpasil lowers blood pressure gently, guards against cardiac damage

Serpasil—in addition to its well-established effectiveness in controlling high blood pressure—offers an important bonus in treating hypertension. Laboratory studies show that Serpasil can prevent stress-induced heart damage,[1,2] presumably through its ability to deplete the catecholamines (epinephrine and norepinephrine) from the myocardium.[3,4]

These laboratory data are clinically significant in light of growing evidence[5-7] that more than purely "mechanical" overwork may be involved in cardiac damage associated with hypertensive disease. Raab[5] suggests that much of this damage is due to a direct metabolic action of the catecholamines on heart muscle. The way to prevent it, he believes, is to deplete or inactivate excess catecholamines.

Thus, Serpasil not only eases the mechanical burden on the heart by reducing peripheral resistance and slowing heart rate, it may also provide protection against catecholamine-induced heart damage—the added benefit in prescribing Serpasil for hypertension.

LABORATORY EVIDENCE SHOWS SERPASIL PREVENTS STRESS-INDUCED HEART DAMAGE[2]

Severe heart damage in unprotected stressed rat. Tissue taken from rat given 2α-methyl-9α-fluorohydrocortisone and stressed (by restraint) for 15 hours. (Photomicrographs from Raab.[2])

No heart damage in stressed rat protected with Serpasil. Tissue taken from rat given 2α-methyl-9α-fluorohydrocortisone and stressed as at left, but also given Serpasil (0.4 microgram daily for one week).

Note: While Serpasil did not completely protect the hearts of all animals in this study, it greatly reduced myocardial damage in most of them. Original magnification of photomicrographs: approximately 450 X.

References: 1. Raab, W., Stark, E., and Gigee, W. R.: Circulation 20:754 (Oct.) 1959. 2. Raab, W.: Research report to CIBA. 3. Carlsson, A., Rosengren, E., Bertler, A., and Nilsson, J.: Psychotropic Drugs (edited by Garattini, S., and Ghetti, V.), Elsevier Publishing Company, Amsterdam, 1957, pp. 363-372. 4. Waud, D. R., Kottegoda, S. R., and Krayer, O.: J. Pharmacol. & Exper. Therap. 124:340 (Dec.) 1958. 5. Raab, W.: Am. J. Cardiol. 5:571 (May) 1960. 6. Bayer, O., Borden, N. E., Boominghaus, H., and Effert, S.: Ztschr. klin. Med. 146:607 (June) 1950. 7. Raab, W.: Hormonal and Neurogenic Cardiovascular Disorders, The Williams & Wilkins Company, Baltimore, 1953, pp. 467, 465.

Complete information about indications, dosage, cautions, and side effects of Serpasil—as well as a full report on its heart-protecting action—will be sent on request.

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BIOLOGIST SAYS CHROMOSOMES MAY BE LINKED CIRCLES

The famous Watson-Crick model of desoxyribonucleic acid (DNA) may be in for some remodeling.

The two British biochemists pictured the molecule of hereditary substance as a double helix, resembling a long, thin coil spring. But an Oregon biologist suggests that the coils are actually bent into a circle. Chromosomes, he believes, may consist of a chain of such circles, joined edge to edge.

Dr. Franklin W. Stahl, of the University of Oregon, evolved his new theory from attempts to "map" the genes of the fungus Neurospora and of the T4 virus. By collating the results of hundreds of cross-breeding experiments, he was able to estimate the distances between a number of genes. But the various distances were consistent only if they were assumed to lie on a closed curve rather than a straight line, he told the American Institute of Biological Sciences.

Genetic maps of higher organisms, Dr. Stahl notes, appear to show the straight-line configuration. But he believes that intensive mapping of one chromosomal region would reveal the chain structure there, too.

CARPAL TUNNEL SYNDROME NOT CAUSED BY ARTHRITIS

It might be gout. It could be nonspecific tenosynovitis, acromegaly, or even a simple wrist fracture. But whatever the cause of carpal tunnel syndrome, it's *not* rheumatoid arthritis.

So say Drs. Robert M. Wells and Ernest W. Johnson, of Ohio State University, at the end of an intensive but vain search for the syndrome in 30 arthritics with "considerable" hand and wrist involvement.

The two investigators studied their patients by taking bilateral medial nerve conduction velocities, carpal canal x-rays and erythrocyte sedimentation rates.

No patients showed prolonged latency of conduction at the wrist— a specific diagnostic finding in carpal tunnel syndrome. Conduction times averaged only 3.65 milliseconds—comparable to those of 30 healthy controls. Special x-ray projections of the carpal canal revealed no bony encroachment.

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REFERENCES: (1) Coffey, G. L., *et al.: Antibiotics & Chemother.* 9:730, 1959. (2) Courtney, K. O.; Thompson, P. E.; Hodgkinson, R., & Fitzsimmons, J. R.: *Antibiotics Annual* 7:304, 1959-1960. (3) Godenne, G. D.: *ibid.*, 310. (4) McMath, W. F. T., & Hussain, K. K.: *Pub. Health* 73:328, 1959. (5) Personal Communications to Department of Clinical Investigation, Parke, Davis & Company, 1959. (6) Shafei, A. Z.: *Antibiotic Med. & Clin. Therapy* 6:275, 1959. (7) Lopez Elias, F., & Oliver-Gonzalez, J.: *Antibiotic Med. & Clin. Therapy* 6:584, 1959. (8) Carter, C. H.: *Antibiotic Med. & Clin. Therapy* 6:586, 1959. (9) Thompson, P. E., *et al.: Antibiotics & Chemother.* 9:618, 1959. (10) Dooner, H. P.: *Antibiotic Med. & Clin. Therapy* 7:486, 1960. (11) Coles, H. M. T., *et al.: Lancet* 1:944, 1960. (12) Moffett, H. F., & Toh, S. H.: *Antibiotic Med. & Clin. Therapy* 7:569, 1960. (13) Fast, B. B.; Wolfe, S. J.; Stormont, J. M., & Davidson, C. S.: *Arch. Int. Med.* 101:467, 1958. (14) Mackie, J. E.; Stormont, J. M.; Hollister, R. M., & Davidson, C. S.: *New England J. Med.* 259:1151, 1958. (15) Stormont, J. M.; Mackie, J. E., & Davidson, C. S.: *New England J. Med.* 259:1145, 1958.

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A LETTER FROM THE PUBLISHER

During the past year this column has devoted considerable space to discussing the role physicians play in determining their own futures as well as the medical future of our country. We have urged our readers to take a direct interest in encouraging the younger generation to pursue medical careers, and we have tried to underscore the principle that, in an age of increasing technology, the physician more than ever must be a man of wisdom, understanding and humility—in addition to being a master of the science of medicine.

But one of my associates has just put an article on my desk which brings me up sharply on a matter which I have too long neglected.

It's a story which appeared in the September 12 issue of *LOOK,* a moving tribute to Dr. Connie Guion who, at 79, still practices medicine 12 hours a day. The grandeur of her career serves to highlight one of our gravest blind spots—the significant place women could hold in the professional life of the nation. The sad fact is that in the U.S. only six per cent of doctors are women, whereas in Russia, for instance, 75 per cent are women.

What a vast untapped source of professional talent would be made available to medical practice and research if more and more women were to follow in Dr. Guion's footsteps! Instead of a constantly decreasing physician-population ratio, this vast storehouse of medical talent could go far toward alleviating the shortage of GPs, pediatricians, obstetricians, researchers, country doctors, teachers and all the many other practitioners who constitute a nation's medical manpower.

So, MWN herewith adds another tenet to its "platform" of more gifted young people in medicine, more doctors in rural communities, more emphasis on the human elements of medical practice. To these, we add *more women in medicine.*

Our cover story of last issue, in which we highlighted the activities of women in cancer research, is the first of many features pointing out the part women are playing and could play in the future of medicine. We'll report on women in medical schools and on hospital staffs, and the roles they play in medicine in other parts of the world.

Dr. Connie Guion is a graduate of Wellesley College and Cornell University Medical College. She began her practice at "4 o'clock in the afternoon of May 6, 1926." She is the first woman in this country to become a professor of clinical medicine, the first woman board member of New York Hospital, and the first living woman doctor to have a hospital building named for her.

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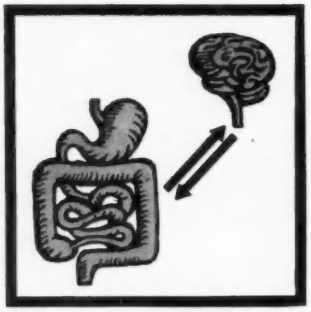

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OUTLOOK

- **TB at all-time low, experts see disappearance**
- **Public Health Service warns of new flu outbreak**

Instant transmission of medical data from the human body to recording instruments anywhere in the country is being forecast by the Bell Telephone System. Bell engineers predict, for example, that a system for transmitting "live" electrocardiographs will be available to doctors and hospitals sometime in 1962. Also in the works: a machine that will transmit x-rays by telephone.

A new outbreak of influenza can be expected this fall and winter, according to the U.S. Public Health Service. Surgeon General Luther Terry urges that the following groups be vaccinated immediately: Persons with heart or lung disease, persons over 65 and pregnant women. These are the groups, says Dr. Terry, that accounted for most of the 86,000 flu-connected deaths between September, 1957 and March, 1960. The Health Service points out that outbreaks of Asian flu, which come in two- and three-year cycles, are currently due. Flare-ups of Type B flu, which occur in four- to six-year intervals, are already overdue.

Two new medical schools are being planned for metropolitan New York. One is to be built by the state and the other by the city. The site, design and cost of each hinge on the outcome of talks now going on between city and state officials. If the plans materialize, the city-operated institution would become the only municipal medical school in the U.S. The state already operates a medical school in Brooklyn.

The virtual disappearance of tuberculosis is forecast on two fronts. Metropolitan Life Insurance Company statistics show the disease can be all but wiped out, particularly through drug therapy. The 1960 tuberculosis death rate of 6 per 100,000, Metropolitan Life points out, represents an all-time low. And the Veterans Administration reports the number of cases it treats has dropped so radically that it will be able to convert three TB hospitals into general hospitals.

All U.S. cars by 1964 may be equipped with devices to control exhaust fumes. If manufacturers haven't started supplying them by that time, HEW Secretary Abraham Ribicoff says Congress will be asked to pass anti-exhaust legislation. Dealers have been adding anti-fume devices on all new cars sold in California this year. Selling for $6 or less, they destroy 25 to 33 per cent of the smog-creating hydrocarbons.

A nationwide study of renal hypertension is being launched by the National Institutes of Health. Seven medical schools (Northwestern, Rochester, Ohio State, Tulane, University of California, Stanford and University of Maryland) and one hospital (New York's Montefiore) will cooperate in gathering data on the incidence, diagnostic methods and treatment of the disease. Says an NIH official: "The next two or three years may very well bring an advance in the field equal to any that has been made in the last 15 years."

The Kefauver hearings will get the documentary treatment in a broadcast now being prepared for fall release by New York radio station WOR. If the radio version stirs up enough public interest, the station may do it on television and distribute it to outlets in Boston, Washington, Memphis, Detroit, Los Angeles and San Francisco.

African medical students will be entering their own unit of Hebrew University-Hadassah Medical School in Israel this November. The first class of 20 students will be from Nigeria, Liberia, Ghana, Mali, Ethiopia and other African-Asian countries. Courses will be conducted in both English and French.

MEETINGS

Oct.	12-14	International College of Surgeons, Atlantic City
Oct.	14-20	International Congress of Neurosurgery, Wash., D. C.
Oct.	15-20	International Congress of Allergology, New York
Oct.	15-20	Pan American Congress of Endocrinology, Lima, Peru
Oct.	17	American Dental Association, Philadelphia
Oct.	20-24	American Heart Association, Miami
Oct.	22-27	American Association of Anesthesiologists, Los Angeles
Oct.	22-25	American College of Gastroenterology, Cleveland
Oct.	23-24	American Cancer Society, New York
Oct.	24-30	World Health Organization: Expert Committee on Radiation, Geneva
Oct.	25-28	American Association of Blood Banks, Chicago
Oct.	27-28	Association of Clinical Scientists, Wash., D. C.
Oct.	27-28	College of American Pathologists, Atlantic City
Oct.	31	Interscience Conference on Antimicrobial
Nov.	2	Agents and Chemotherapy, New York
Oct.	31	American Society of Microbiology, New York
Nov.	2	
Oct.	31	Symposium Research of Influence of Psycho-
Nov.	3	tropic Drugs on Higher Nervous Activity, Prague

in

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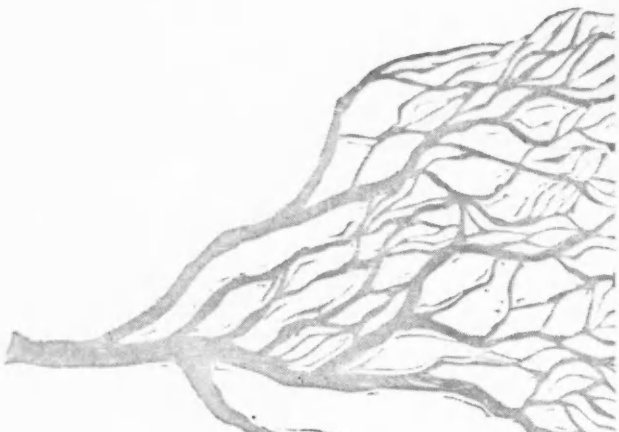

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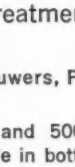
EFFECTIVE MANAGEMENT OF HYPERTENSION BEGINS



WITH DIURIL

MEDICAL WORLD NEWS
September 29, 1961 Vol. 2, No. 20

TEAM REPORTS ISOLATION OF SERUM HEPATITIS VIRUS

Immunological and cell culture studies by Arizona researchers may produce test to detect latent carriers among blood donors

Nineteen sixty-one, the worst hepatitis year on record, may also mark the turning point in attempts to control the disease.

Last June, it was first announced that three viruses capable of causing infectious hepatitis had been isolated, and that a vaccine against one of them had already passed its first field test (MWN, July 21). By August, the step-by-step intracellular development of one of these viruses had been photographically recorded, opening the way for additional vaccines (MWN, Sept. 15). Also in June a virus-like substance was reported isolated from 14 of 22 children involved in an epidemic of infectious hepatitis on an Indian reservation in eastern Arizona.

Now, a second team of Arizona investigators claim success, both in isolating the related virus of *serum* hepatitis and in developing a test to identify potentially dangerous carriers of this form of the disease.

This latest development got under way just a year and a half ago when virologist Vern Bolin, director of the Bolin Laboratories, and Drs. John B. Alsever and James D. Barger, of the Southwest Blood Banks in Phoenix, started their virus hunt with a pool of hepatitis-contaminated plasma obtained from the National Institutes of Health in Bethesda, Md.

Within five weeks after intravenously inoculating five volunteers at the Arizona State Prison with 1 cc of reconstituted plasma, the Phoenix group recovered a virus-like substance from the prisoners' blood which produced typical cellular damage in several standard human cell cultures. After incubation periods ranging from 91 to 130 days, all five volunteers came down with clinically proven serum hepatitis.

The investigators found that while the isolated agent could be successfully passed through as many as 14 human cultures, it would not grow in cultures of monkey kidney cells or in chick embryos—materials which have proven ideal habitats for a wide variety of other human viruses. Surprisingly, however, they discovered that the virus would grow in cultures of rabbit kidney cells. Moreover, inoculated rabbits formed antibodies against the agent. By means of these antibodies, the Arizona team was then able to "fingerprint" virus preparations.

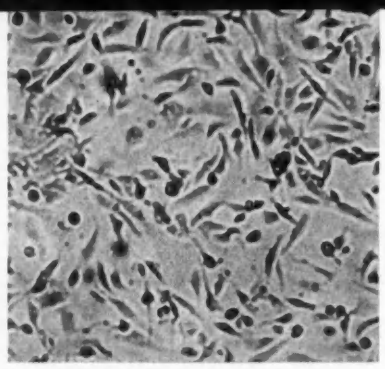
Preparations from the original pooled serum, the prisoner-volunteers, and from a patient with apparent transfusion-induced serum hepatitis, all proved serologically identical. Antibodies with the same immunological properties were also demonstrated in the convalescent serum of all five prisoners. But specific antiserum preparations made from virus-containing material isolated from two patients with clinically diagnosed infectious hepatitis, though they neutralized each other, showed only a partial reaction with the serum hepatitis material. The specificity of the reaction, they say, provides a basis for the diagnostic test.

The Phoenix team believes these immunological studies provide strong evidence for their claim to having finally isolated the serum hepatitis virus. They point out, however, that added proof rests on whether their tissue-grown virus proves an effective infectious agent, or if it is able to produce antibodies which protect against a challenge inoculation. According to Dr. Barger, they are now readying preparations of the agent to see if it produces the typical clinical manifestations of serum hepatitis when injected into volunteers.

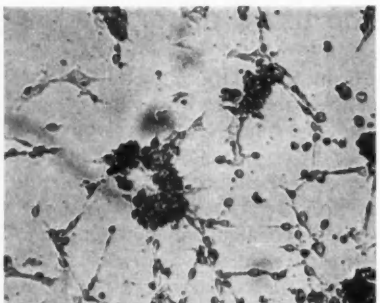
The investigators are also starting electron microscope studies at the University of Arizona, to further identify the virus and microscopically dif-

CONTINUED ON PAGE 14

VIROLOGIST Bolin (center) and Drs. John Alsever (l.), James Barger, comprise group reporting serum hepatitis discovery.



CONTROL CULTURES of rabbit kidney tissue show unbroken pattern (top). Five days after inoculation with the new virus, typical cytopathic changes occur.



HEPATITIS CONTINUED

ferentiate it from the recently-photographed virus of infectious hepatitis. Ultimately, they hope to help settle the long-debated issue of whether serum hepatitis and infectious hepatitis are caused by different viruses or by immunologically dissimilar strains of a single virus. Their work tends to support the two-virus theory. They find, for example, that the serum hepatitis virus is more heat-resistant than the infectious hepatitis virus. And injections of the serum hepatitis virus kill newborn mice within 15 days, whereas their preparations of the infectious hepatitis agent do not.

Originally, the Southwest Blood Banks, which is supporting the research work, set out to develop a test for screening blood donors to eliminate carriers of both types of hepatitis. A two-year follow-up study of transfusion patients, carried out by Dr. Alsever, showed the incidence of serum hepatitis to be nearly one per cent.

Says Mr. Bolin: "We now think we can develop such a test. We have the virus, the antisera and the tissue culture systems which are needed. If our procedures can be simplified, a diagnostic test may soon be available." ■

'LIKE SHOOTING BUCKSHOT

That's what experts term the across-the-board screening for cancer drugs. Instead, they call for zeroing-in on target

Today's massive search for compounds that will be effective against cancer has been likened to shooting buckshot in the dark.

"The vast bulk of today's cancer chemotherapy research is an across-the-board screening of a lot of compounds, with a lot of hoping," explains biochemist George B. Brown, of the Sloan-Kettering Institute for Cancer Research. "Perhaps five per cent of our effort is designed around known biochemical reactions, with a view to interfering with them."

To help bring these metabolic targets into focus, Brown presided at an all-day symposium during the meeting in Chicago of the American Chemical Society. When the last slide had been shown and the lights were turned on, two future targets stood in plain view: sugar metabolism and viruses.

Pasteur, a pioneer in sugar chemistry, demonstrated a century ago that yeast cells from wine can be made to cease fermenting sugars by exposing them to oxygen. Thereupon, they still metabolize carbohydrates, but more efficiently, producing no alcohol.

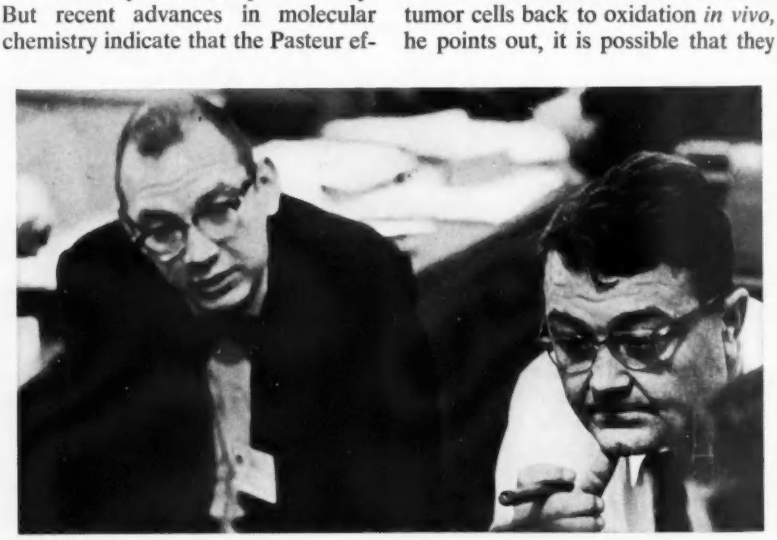
For decades, biochemists reasoned that the oxygen was exerting some effect on the yeast cells' permeability. But recent advances in molecular chemistry indicate that the Pasteur effect is "due to oxidative phosphorylation and enzyme localization in the different cell compartments," Dr. Feodor Lynen, of the Max Planck Institute of Chemistry, told the symposium.

These compartments — mitochondria — compete for inorganic phosphate, he explained. Those that have the proper enzymes to utilize the oxygen win out over those equipped only for fermentation.

Dr. Ray Wu, of New York City's Public Health Research Institute, showed why this finding has a direct bearing on cancer. Healthy animal cells, he pointed out, are aerobic and obtain energy by oxidizing glucose. Tumor cells, however, are anaerobic, fermenting sugar to form lactic acid.

Dr. Wu and a co-worker, Dr. Efraim Racker, have turned up a number of chemicals which favor one or the other of these cellular processes. Tested on ascites tumor cells, two compounds — dinitrophenol and imidazole — aided fermentation by making more phosphate available for it. Pyrimidine and purine nucleosides, on the other hand, inhibited fermentation, and in some cases returned the cells' sugar metabolism to normal.

Such studies, he believes, may help answer the fundamental question of whether fermentation in the presence of oxygen, so characteristic of tumor cells, is required for the growth or spread of the tumor. If ways could be found to shift the metabolism of the tumor cells back to oxidation *in vivo*, he points out, it is possible that they



BIOCHEMISTS M. P. Gordon, G. B. Brown discuss new approaches to chemotherapy.

...N THE DARK'

would cease to be tumor cells.

Zeroing in on the other target — viruses — Nobel Laureate Wendell L. Stanley of the University of California, described them as "the only fast, certain way to make a cancer."

"The effect of a virus on a cell," he said, "is just a wonder to behold. One molecule of its nucleic acid can take over the whole cell." However, the molecule is a sizable one, containing some 5¼ million atoms.

Virus Takes Over Cell

The virus takes over in one of two ways, according to Dr. Stanley: "Either it exerts an effect on the cytoplasm, enabling it to overcome the normal cellular restraints, or it alters the genes of the cell."

But the viral etiology of cancer, he pointed out, is hard to elucidate. Tumor viruses, though resembling ordinary viruses in many obvious ways, may display quite different intracellular mechanisms. "We may have to think either of whole viruses that multiply at the same rate as their host cells and never break out of the cells, or of naked nucleic acids that hitchhike on such common viruses as influenza, yet transduce cancer characteristics."

Even a solution to these puzzles will still leave the virus-cancer picture fairly muddled, in the view of Sloan-Kettering's Dr. Chester M. Southam. "Most cancer is not due to a single factor but rather to a complex of metabolic stimuli," Dr. Southam said. "There are virus-caused tumors which no longer contain viruses. On the other hand, tumors induced by x-rays or chemicals may contain viruses which will transmit the tumor to other animals. And chemical carcinogenesis may require simultaneous or sequential action of more than one chemical, and may, also, be dependent upon an appropriate hormonal milieu."

Virus infections do not always cause disease; in fact, infection without disease is far more common, the Sloan-Kettering researcher pointed out. Other factors must come into play if the virus is to manifest itself in disease. In the case of cancers, these factors may be considered co-carcinogens with the virus.

A clue to how both cancer viruses and tumor cells could be attacked by chemotherapeutic agents comes from studies of biochemical "analogues," according to Milton P. Gordon, University of Washington biochemist. Analogues are chemical counterfeits of vital raw materials, which organisms can be tricked into accepting to the detriment of their economy.

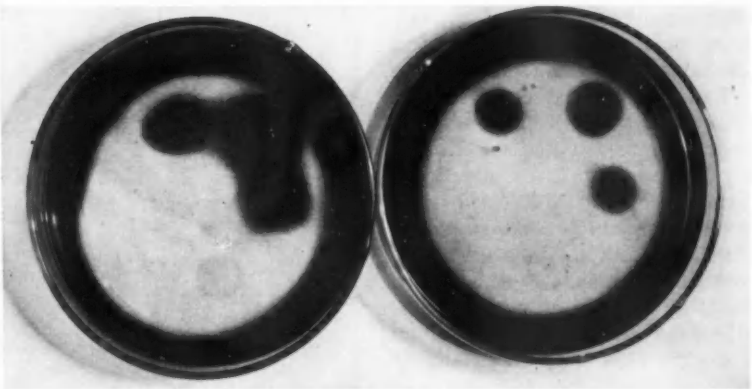
Dr. Gordon has fed one such analogue—5-fluorouracil—to the tobacco mosaic virus. When the organism incorporates the compound into its nucleic acid, he finds, it becomes less infective and more susceptible to irradiation and to certain chemical agents. Another analogue, 5-bromouracil, appears to cause lethal mutations.

The analogues are easily taken up by the virus when they are incorporated into the medium in which it is grown. For plant viruses, the chemicals need only be sprayed on the leaves; as a human counterpart, Dr. Gordon suggests perfusion.

Analogues may also provide a more subtle technique for attacking cancer. The Washington investigator finds that bacteriophages which have absorbed analogues and then have infected bacteria, cause the bacterial nucleus to transmit garbled chemical "messages" to the cytoplasm. This finding, he believes, opens up the fascinating possibility of causing indirect cellular mutations by altering viruses.

Admittedly, Dr. Gordon conceded, this is only a faint lead. But, as symposium chairman Brown summed up: "The haze in front of some of the targets is beginning to clear and allowing the bull's-eyes to come into focus." ■

NEW AGENTS HEIGHTEN THERAPEUTIC EFFECT OF X-RAYS



IRRADIATED agar plate (l.) raises drugs' activity compared with untreated dish.

The search for chemicals that potentiate the tumor-destroying effects of radiation has turned up a powerful new group of agents—sulfhydryl inhibitors—which will receive their first clinical tests this winter.

Dr. Frances E. Knock of Presbyterian-St. Luke's Hospital in Chicago has told the American Chemical Society that the inhibitors inactivate intracellular substances such as cysteine, which normally reduce the effects of radiation on the cell.

The Chicago surgeon-cum-chemist has tested the new compounds—arsenical derivatives of aliphatic or aromatic amines—against tumor cell suspensions on agar plates, in much the same manner as is done in bacteriological assays. Two similar plates are prepared and one is irradiated. The regions of tumor-cell destruction show up as dark areas (see picture) and by comparing the size of these areas on irradiated and non-irradiated plates the degree of potentiation can be estimated.

The sulfhydryl inhibitors have proved to be effective adjuncts to radiation against a half dozen varieties of tumor cells; "their activity far exceeds that of the classic radiation sensitizers such as 2-mercaptoethanol," Dr. Knock declares.

However, she stresses that since "there is no truly specific sulfhydryl reagent," the drugs must be assayed *in vitro* against tumor cells from each individual patient if therapy is to be effective.

SOCKET LIMB EASES WALKING

Newer, below-knee artificial leg gives better control and avoids stump skin changes

Lighter weight, better limb control and fewer skin lesions along the stump are among the advantages claimed for an improved below-the-knee prosthesis.

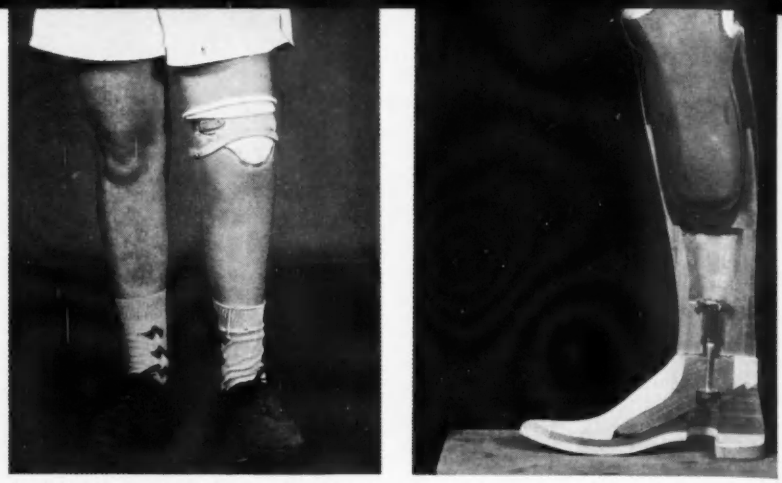
The device, originally developed by engineers at the University of California, eliminates the knee-brace and thigh "corset" of the conventional artificial limb in favor of a cup-like "suspension-cuff." Despite its relative simplicity, however, some prostheticians have not prescribed it routinely.

Two reports to the American Congress of Physical Medicine and Rehabilitation suggest that this caution may be unwarranted. A University of Michigan team has obtained "uniformly satisfactory results" with the simplified prosthesis in an unselected series of 50 patients. And a Baylor University group finds it a "valuable aid" in the treatment and prevention of trophic skin changes associated with conventional prostheses.

The Michigan patients ranged from six to 82 years in age, with stumps varying from 2½ to 12 inches. Dr. Lester E. Wolcott told the Rehabilitation Congress. All reported "comfort and good performance" with the new device. Of the 15 who had previously worn a standard prosthesis, none indicated any desire to return to his old limb.

The new prosthesis, Dr. Wolcott notes, has proven particularly valuable when the stump is flabby, especially in association with fibroelastic diathesia. It has also shown itself satisfactory in the presence of psoriasis, anesthesia and split- or full-thickness grafts on the stump.

Dr. Wolcott explains that the socket of the new device, unlike that of conventional prostheses, is closed at the bottom, enabling part of the patient's weight to be borne by the end of the stump. This "total contact" permits the patient to sense more precisely the position of his "foot" and gives a clearer awareness of balance during movement.



ARTIFICIAL LIMB eliminates thigh lacer, cuts weight and provides a balanced gait.

TROPHIC SKIN changes linked with standard limb (l.) are eased with new device (r.).

Another benefit of the improved limb, according to the Michigan specialist, is elimination of the "choke syndrome"—a common result of poor alignment in the thigh corset and knee joints of the standard limb.

Some Fitting Problems

Two patients, both with stumps less than three inches long, ultimately had to be fitted with thigh corsets to prevent "pistoning" of the stump in the socket of the prosthesis. In five other cases, a waistband and "inverted U" straps solved the problem.

Some patients who changed from conventional prostheses to the new device felt less stability at first because of the way in which the foot is joined to the limb. But the temporary addition of a lateral wedge to the prosthetic foot corrected this problem promptly, says Dr. Wolcott.

An added problem, in patients accustomed to prostheses with "check straps," was a tendency to hyperextend the knee and to spend too much time on the heel of the prosthesis in the "stance phase." Proper alignment and building up the sole of the "foot" also eliminates this difficulty.

The experience of Baylor University, reported by Dr. Lewis A. Leavitt, focused on the problem of trophic skin changes that sometimes develop in amputees fitted with conventional prostheses. In this type of limb, Dr. Leavitt explains, the patient's weight is concentrated on the supracondylar surface and the patellar tendon. Moreover, tissue shrinkage in the stump necessitates additional liners to pad out the socket; these must later be removed if the patient gains weight. The result is "a series of small traumas" to the weight-bearing tissue.

During the past year the Texas specialist says his group has treated nine amputees with trophic skin changes. After fitting with the "total contact" prosthesis, all have shown "marked improvement," resuming normal activities within a few months. ■

HEW LENDS SUPPORT TO KEFAUVER MEASURE

Secretary Ribicoff backs proposals to let FDA pass on efficacy of new drugs, but hedges on disputed patent law changes

Senator Estes Kefauver beamed broadly as HEW Secretary Abraham Ribicoff put on record the Administration's stand on the Senator's current favorite subject—the bill to tighten controls on the pharmaceutical industry and bring down the allegedly high cost of drugs.

For Ribicoff, while paying tribute to the "enormous" contributions that new drugs had made to the nation's health, agreed with the Tennessean's contention that there is also a "negative side."

He talked about "serious shortcomings" in the drug industry; about "a pattern of high prices and incomplete safeguarding of the consuming public"; about "planned obsolescence" and "extravagant advertising"; and about promotion campaigns "not always accurate or wholly truthful."

Speaking at hearings held by the Senate anti-monopoly subcommittee, Ribicoff agreed that Congressional action is needed to provide tighter Government controls over the quality and promotion of drugs. These, he insisted, would no doubt lead to a "substantial" cut in drug prices.

Indeed, Ribicoff said, Kefauver's own controversial proposals for putting a tighter rein on the drug industry would be "a great step forward" — particularly, he added, if they included a number of amendments which he and the Food and Drug Administration had in mind.

No Full Endorsement

But as the Secretary carefully spelled out these proposed changes and filled in the Administration's thinking on specific provisions of Kefauver's bill, it became clear that his testimony before the Senate committee was less than an across-the-board endorsement. In fact, some drug industry leaders, who had feared the worst, feel they can probably live with many of the points in Ribicoff's blueprint.

The Secretary, for example, fully endorsed Kefauver's key proposal that the FDA be authorized to see that manufacturers prove that a new drug is effective—as well as safe—before it is released to physicians. He also supported other provisions in the Senator's bill calling for tougher procedures for clearing all antibiotics and other drugs, and for increased plant inspection powers for FDA.

But he shied away from any commitment on Kefauver's controversial proposals for overhauling the patent laws, and also suggested that the medical profession and drug industry be given a chance to standardize drug names before the FDA steps in.

In discussing the major issue of FDA ruling on drug effectiveness, Secretary Ribicoff went all-out for the extra authority. And, in the process, he vigorously attacked the AMA's contention that the final determination of effectiveness should be left to the medical profession and the experience of doctors.

RIBICOFF outlines Administration's view.

Ribicoff cited a statement by Dr. Isaac Starr of the University of Pennsylvania and chairman of the AMA Council on Drugs: "No one actively practicing medicine has the time, and few have the ability, to examine and evaluate the original sources of information about these new remedies."

At the same time, however, the Secretary bluntly made it clear that the Administration only favored allowing the FDA to pass on whether clinical data submitted by the manufacturer indicates that a drug is effective for the use recommended. He insisted that the Administration definitely does not intend to have FDA pass on "relative effectiveness." A drug should not be rejected, Ribicoff said, simply because FDA considered it less effective than another drug on the market. This clear stipulation, some industry officials said, would make the provision more palatable.

"The time has come," Ribicoff told the anti-monopoly subcommittee, "to give American men, women and children the same protection we have been giving hogs, sheep and cattle since 1913. For the plain fact is that until we are allowed to require that a drug be proven effective before it is marketed, we must say to the American people: A hog is protected against worthless drugs, but you are not."

Backing Lacking for Four Points

Under the 1913 Virus-Serum-Toxin Act, biologicals for domestic animals must be licensed. The same is true for biologicals used in medicine, but not for drugs. Under the letter of the present law, FDA is empowered to pass only on safety. To remove a worthless drug from the market, it has to resort to complicated court actions.

The Kefauver bill would require all promotional material to contain the same detailed data as on drug package inserts. Ribicoff said this was already pretty well covered by FDA regulations. He also demurred from two other provisions that would require him to review all drug warning labels and publish an annual list of dangerous drugs.

Kefauver's bill calls for HEW to rule on drug names, a measure aimed at making it easier for physicians to prescribe by generic rather than brand names. Ribicoff called on the AMA, drug industry and USP to work out standard names on a voluntary basis. He suggested that stand-by authority be given to the FDA in case the voluntary method fails. ■

CANCER STATISTICS MULTIPLY— BUT DIVIDE THE

In probing etiology of the disease, researchers find higher incidence of some neoplasms among foreign-born Americans. Meanwhile, authorities overseas dispute hazards of smoking

Masses of statistics on the epidemiology of cancer continue to pile up. Latest contribution to what oncological buffs call the "numbers game" comes from non-medical meetings on both sides of the Atlantic.

In St. Louis, at the American Sociological Society, a team from Roswell Park Memorial Institute has just cited some new figures on cancer incidence among national groups in the U.S. In Paris, at the International Statistical Institute, two leading U.S. cancer experts have argued the pros and cons of smoking as an oncogenic factor.

The Roswell Park study, based on nearly 36,000 cancer patients admitted to the Institute over a 12-year period, compares incidence of half a dozen types of tumors among Polish, Italian and German immigrants, as well as the native-born population. By statistical techniques, the investigators have sought to rule out the influence of variations in age, rural or urban residence, occupational class and smoking habits. "We have tried to eliminate all but the ethnic variable," says Dr. Saxon Graham, who reported the study.

The Roswell Park investigators find that the incidence of lung, gastric and esophageal cancers is markedly higher in foreign-born than in native-born. And Polish-American males, in particular, seem even more prone to these three neoplasms than are other immigrant groups. Italian-Americans, on the other hand, show a predeliction for cancers of the bladder, pharynx and colon, while German-Americans show no special proneness to any type of tumor. Indeed, their incidence of buccal-cavity cancers fell significantly below average.

Similar marked differences, notes Dr. Graham, may well exist in other nationalities, but the study's sample among these groups was too small to permit valid conclusions.

The Roswell Park team has made no attempt to draw etiological conclusions from its study, regarding the results as merely "clues as to where to look further." Noting that the incidence of stomach cancer in the foreign-born is 2.3 times greater than among native-born, for example, Dr. Graham speculates that the finding "may be related to some difference in diet."

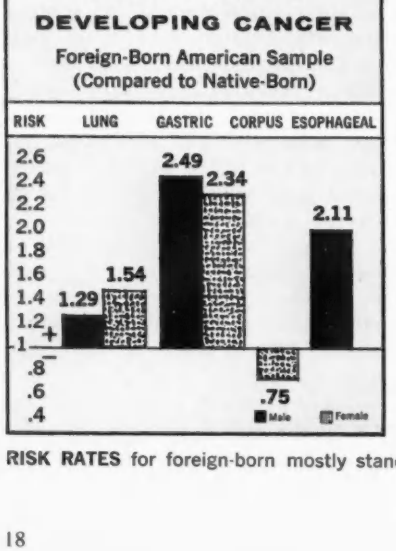
Polish-American men, he finds, have nearly twice as many esophageal cancers as other immigrants, which "might indicate a relationship with alcohol consumption." The validity of these postulations, says Dr. Graham, may emerge from a detailed study of dietary habits of various ethnic groups soon to be concluded at the Institute.

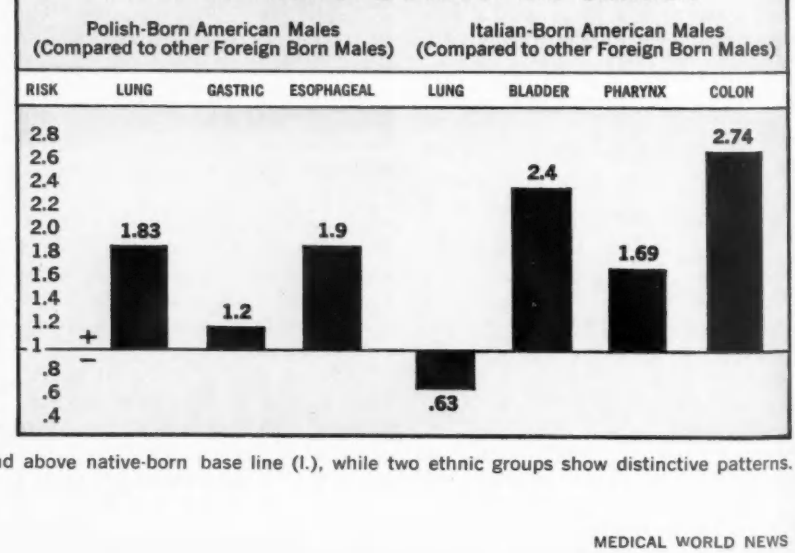
In Paris, meanwhile, the significance of epidemiological statistics became a center of controversy. Dr. E. Cuyler Hammond, of the American Cancer Society, long-time proponent of a connection between smoking and lung cancer, presented figures indicating that over-all death rates are highest among smokers who inhale the most.

How Deep the Drag

Dr. Hammond's report—a preliminary analysis of a cancer-prevention study involving more than a million Americans—confirms previous findings that the death rate increases with the number of cigarettes smoked. But it also indicates that the rate rises with depth of inhalation. Indeed, "degree of exposure of lung tissue (and other tissues by way of the blood) may be more dependent upon depth of inhalation of the smoke than upon amount of tobacco consumed."

Regardless of smoking materials—pipe, cigar or cigarette—the mortality rate among "noninhalers" was only two per cent above that of nonsmokers, says Dr. Hammond. Even "slight" inhalation pushed the death rate to 44 per cent above nonsmokers; for "moderate" and "deep" inhalers the figures





RISK RATES for foreign-born mostly stand above native-born base line (l.), while two ethnic groups show distinctive patterns.

rose to 77 and 118 per cent.

Though deaths from lung cancer among regular cigarette smokers were nine times those among nonsmokers, the disease caused less than 11 per cent of the "excess deaths." Other pulmonary illnesses made up an additional seven per cent, but coronary disease accounted for more than half of the excess.

A strong challenge to the Hammond study came from the Mayo Clinic's Joseph Berkson, who does not believe that smoking causes lung cancer. In a speech to the Paris meeting, he chided the practice of "relating particular diseases with particular factors that appear etiologically plausible, while neglecting to note similar associations of the same disease with other factors."

As an example, he cited figures indicating that the death rate from lung cancer is nearly twice as high among divorced persons as among married individuals. Similar correlations with marital status are found in death rates for "such diverse disease groups as heart disease, arteriosclerosis, suicide and appendicitis."

Inaccuracies and Biases

These correlations, he suggested, actually reflect "basic inaccuracies and biases of the statistics"—and so do the figures relating lung cancer and smoking. As further evidence, he said, "a recent careful study" by an Australian pathologist indicates that "the reported low death rate from lung cancer of decades ago was due to poor diagnosis, and that there probably has been no real increase at all!"

Epidemiological statistics, he declared, will make a "sufficient contribution if they locate suggestions for the general biologist, pathologist and biochemist to investigate and decide upon with due regard for the established canons of science."

Dr. Hammond evinced no disagreement with this general conclusion. "From the standpoint of public health, we are primarily concerned with the over-all death rate rather than the death rate from some one disease." But regarding the relationship of smoking and lung cancer, "my opinions have not changed." ■

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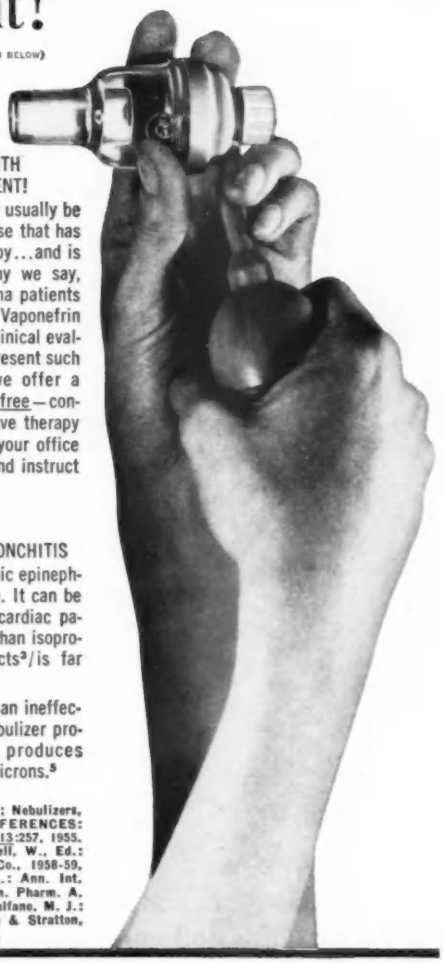

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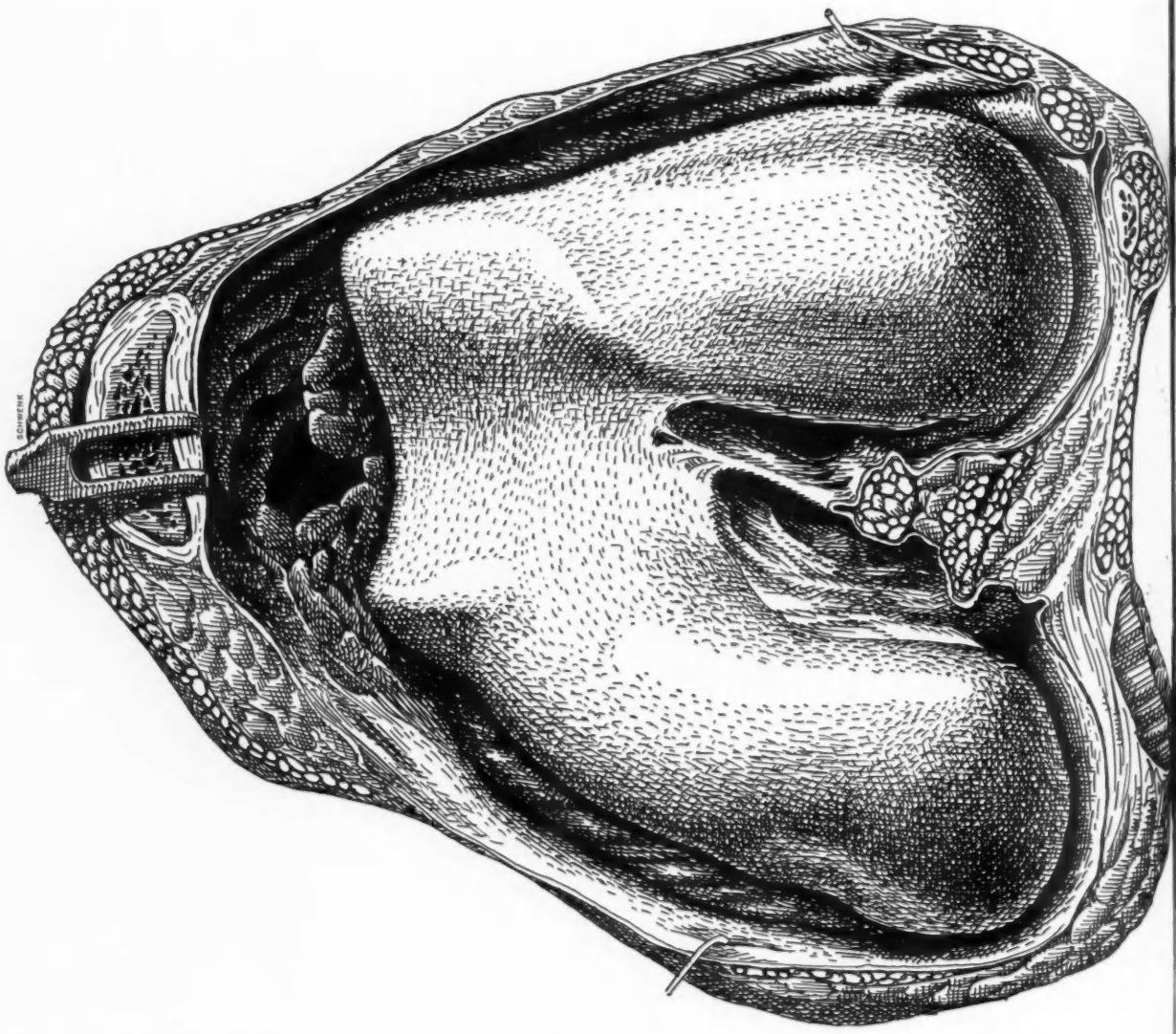

because patients are more than arthritic joints, asthmatic lungs and inflamed skin.
controlling inflammatory symptoms in steroid-responsive disorders is not enough!

Even cortisone, with its severe hormonal reactions, can effectively control allergic, inflammatory and rheumatoid symptoms. But a patient is more than the sum of his parts—and the joint, lung and the skin are only parts of a whole patient. Symptomatic control is but one aspect of modern corticotherapy, because what is good for the symptom may also be bad for the patient.

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ARISTOCORT, in contrast to other steroids, does not stimulate the appetite and does not

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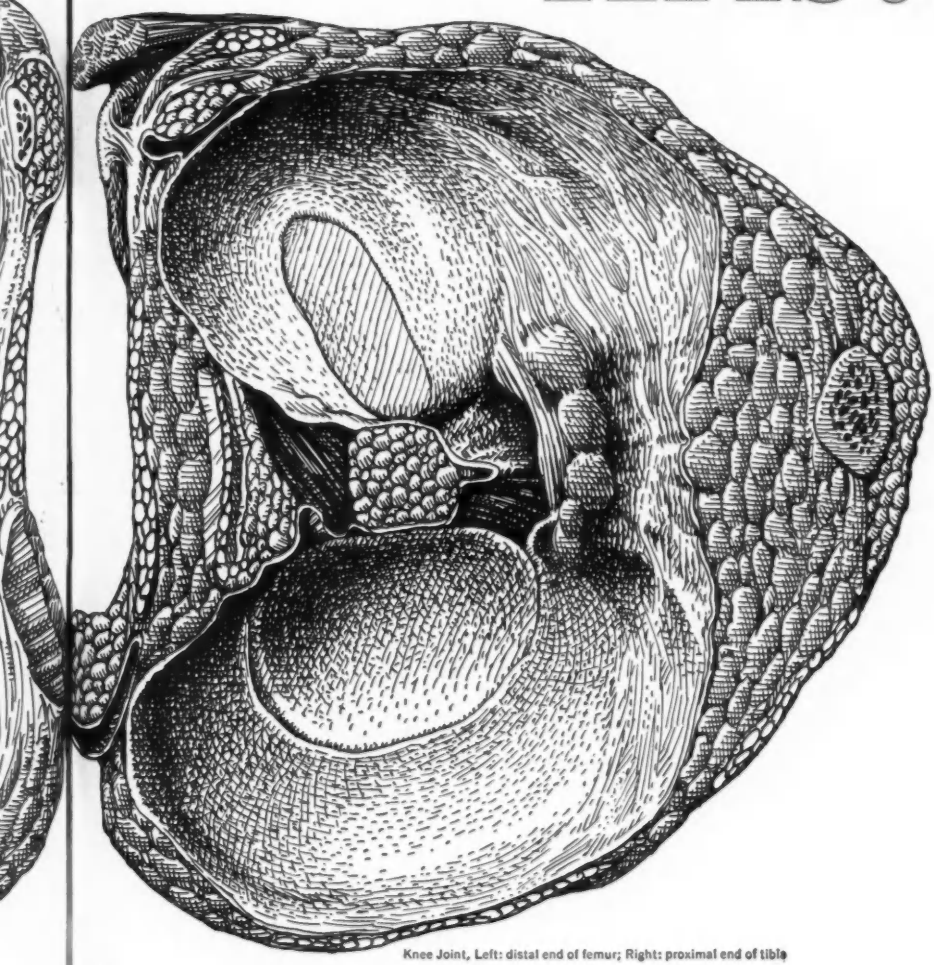

Knee Joint, Left: distal end of femur; Right: proximal end of tibia

cause weight gain. In certain patients, there may even be a desirable suppression of appetite with ARISTOCORT, and in some patients who had gained weight on other steroids, there was less appetite stimulation with ARISTOCORT.[1-5]

When the complicating problem is sodium retention or edema... Edema is, of course, undesirable in any patient. But salt and water retention is a particularly serious complication in patients with cardiac disease, hypertension, pulmonary fibrosis or renal disorder. This complication has often prevented the use of corticosteroids in patients with steroid-responsive disorders.

More than four years of extensive experience with ARISTOCORT have now demonstrated decisively that such patients can be treated effectively in indicated conditions, without this hazard.

Thus, Boland[2] reported that triamcinolone has less tendency than any other available steroid for salt and water retention; Hol-

lander[1] found triamcinolone useful in the treatment of patients with cardiac decompensation who needed steroid therapy since it did not produce edema,[8] and a similar statement was made by McGavack *et al.*[6] Fernandez-Herlihy,[7] among other investigators, has reported that triamcinolone brought on diuresis and sodium loss in patients with edema induced by earlier steroids or other causes.

When the complicating problem is emotional disturbance or insomnia . . . Ill people are often emotionally disturbed. Euphoria and insomnia have been classic by-products of steroid therapy, except for ARISTOCORT. Psychic aberration and insomnia, intensifying itching and harmful scratching, have often accompanied other steroid therapy.

ARISTOCORT has been repeatedly singled out for the remarkably low incidence of mental stimulation and insomnia with its use.[1,3,4,8] This important attribute means that patients with emotional and nervous disorders, who also have steroid-responsive conditions, can

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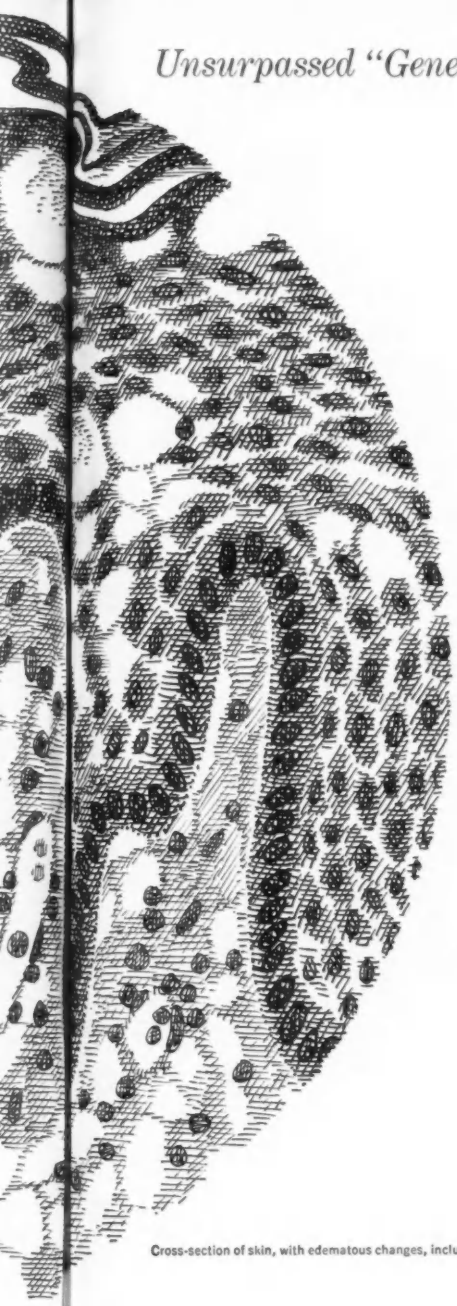
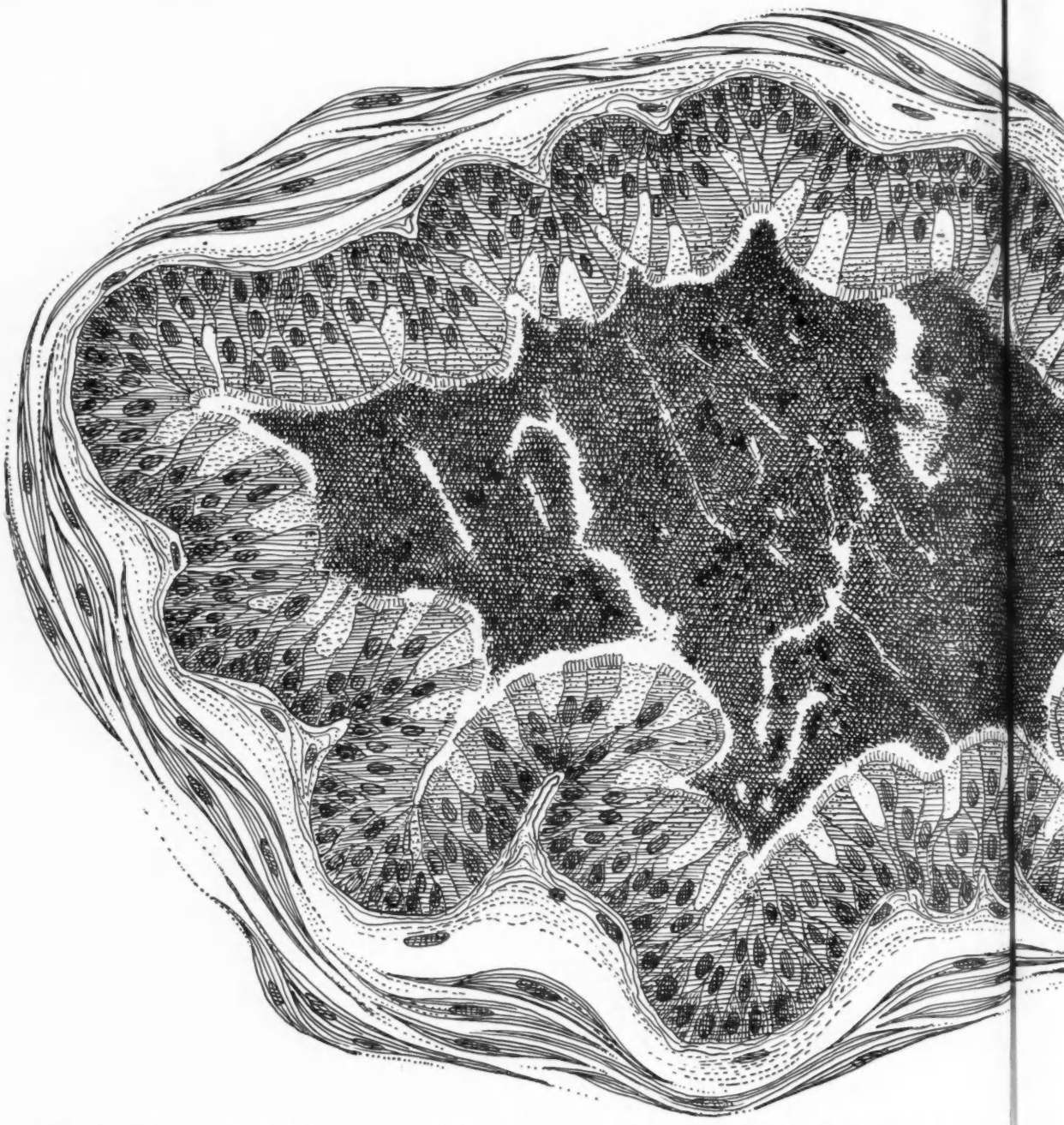


Cross-section of skin, with edematous changes, including vacuolization

be treated effectively with ARISTOCORT, with minimal risk of psychic stimulation.

When the complicating problem is hypertension... Hypertensive patients with conditions indicating steroid therapy, who were formerly considered unsuitable candidates for corticosteroids, can be treated with ARISTOCORT without the danger of increasing hypertension. Boland[2] states that triamcinolone has little or no tendency to aggravate arterial hypertension. Sherwood and Cooke[9] found no blood pressure increase in any patient treated with ARISTOCORT. In some, blood pressure even fell, and of these, three had been hypertensive. Kanof *et al.*[10] reported that when ARISTOCORT was given to patients for long periods, there were no significant changes in blood pressure.

ARISTOCORT ... Unsurpassed "General Purpose" Corticosteroid Outstanding For Short- Or Long-Term Use ... A substantial body of literature now attests to the unsurpassed efficacy and relative safety of ARISTOCORT in the treatment of acute conditions, requir-



ing short-term steroid therapy, and for chronic disorders, requiring prolonged use of steroids, often for a number of years.

A recent statement by an allergist, who described himself in his report as following a "middle course" in corticosteroid therapy may be taken as a representative example.[11] "... I have utilized this corticoid [triamcinolone] more than others previously prescribed, and for the time being at least, it is the corticoid of first choice. Since the introduction of triamcinolone, other corticoids including dexamethasone and methylprednisolone have been introduced into clinical use and their superior virtues extolled. I have had only a limited experience with these corticoids, and therefore cannot pass critical judgment. In the few cases in which I have used them, they did not seem to offer any special advantage over triamcinolone, although this is hard to evaluate ..."

An important point made by this investigator was that ARISTOCORT was used in conjunction with other drugs, such as iodides, expec-

Unsurpassed "General Purpose" and "Special Purpose" Corticosteroid...
Outstanding for Short- and Long-term Therapy...

Aristocort

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Cross-section of asthmatic bronchiole; lumen filled with exudate

torants, and bronchodilators. ARISTOCORT dosage could thus be reduced gradually to a relatively small daily maintenance dose. A similar recommendation was made for using antihistamines with corticoids to maintain the patient symptom-free on reduced corticoid dosage.

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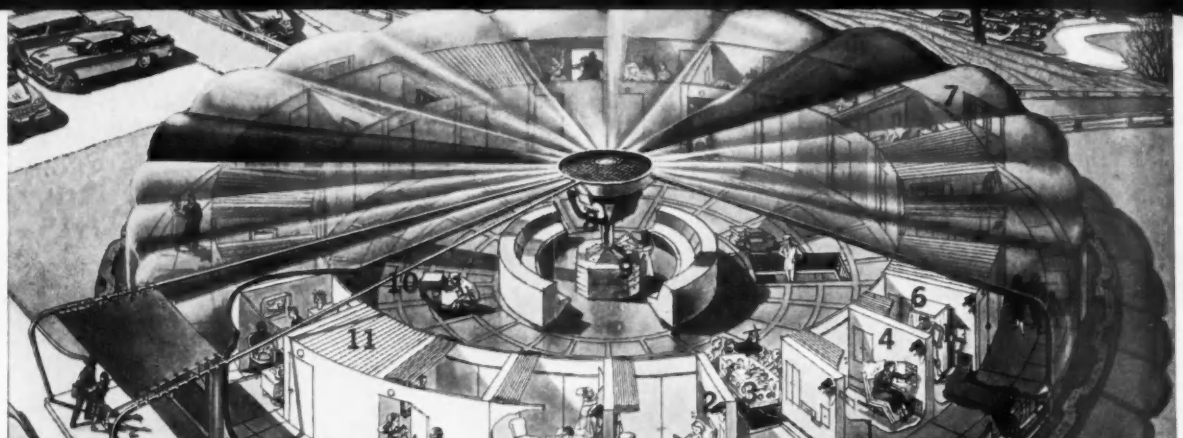

ATOMEDIC HOSPITAL: **1** Bath in plastic disposable tub; **2** Room TV monitor; **3** Germ-free surgery; **4** Pre-packaged meals and refrigerator unit; **5** Ultra-violet air purifier and intake; **6** Bed in shower position; **7** Plastic double-shelled roof, filled with colored gas to filter sunlight; **8** Revolving TV Screen; **9** Conveyor to underground cobalt sterilizer; **10** Storage; **11** Slide-back ceiling.

HOSPITAL OF THE FUTURE

Round or conical, above ground or below, tomorrow's hospitals will undergo notable changes

"Maybe we should tear down every hospital in the country and begin all over again with automated facilities. Expensive, yes—but it would save a lot of money in the long run."

This startling suggestion comes from pediatric surgeon Hugh C. MacGuire of Montgomery, Ala. As founder and board chairman of the nonprofit Atomedic Research Center, Inc., he is doing everything he can to make his suggestion a reality. Dr. MacGuire's goal: hundreds of mass-produced automated hospitals, inexpensive to build and simple to operate.

Dr. MacGuire isn't alone in championing radical concepts in hospital design. E. Todd Wheeler, director of hospital planning and senior associate of Perkins & Will, Chicago architects, has a few far-out ideas of his own. In a speech to the International College of Surgeons, Mr. Wheeler looked ahead 30 years and saw development of drive-in hospitals, underground hospitals, tree-like hospitals, hospitals made of canvas and plastics, round and conical hospitals.

"It may be," says Mr. Wheeler, "that the hospital of the 1990s will be built around one of the clinical specialties. Take anesthesiology: Why not extend its benefits to each patient as he comes into the hospital and keep him comatose until the moment of his discharge?"

What goes on while the patient is completely anesthetized? "He will occupy a wheel chair equipped with pneumatic pads on the seat, back and arms, and foot rests activated rhythmically to stimulate peristalsis while he is tilted back at intervals to elevate the feet."

In this Orwellian scheme of things, the patient won't occupy any unnecessary space, according to architect Wheeler. "His room will consist of a completely air-conditioned chamber three feet wide, four feet deep and five feet high."

To conservative hospital management, Dr. MacGuire's Atomedic concept could scarcely be more radical. Circular, collapsible, portable and floatable, the Atomedic hospital will look like nothing else before it (see drawing). Among the features:

- No operating rooms, no kitchens, laundry or bathrooms.
- Surgery is performed on the patient's bed, inside a sterile polyethylene bag, inflated over the body.
- The bed itself converts into bathtub, shower unit and toilet; its movable pipe supports serve as plumbing.
- The whole structure has a hollow base and can float, so it can be erected on water—in a flood area or bombed-out harbor, for instance.

"This is no Buck Rogers pipe dream," Dr. MacGuire maintains. "The pilot model of our 22-patient hospital will be in operation by the first of the year. Once we've got the kinks ironed out—in a decade, I'd say—industry will be in a position to duplicate our prototype anywhere."

Assembly-line Concept

Atomedic's 24 identical segments (22 patient-rooms and administrative areas) interlock like the pieces of a jigsaw puzzle. Any area with a population of 2,500 will be able to afford at least one, MacGuire believes. (A city of 100,000, accordingly, might have 40 such hospitals scattered throughout the community.)

Kitchen, laundry and maintenance help are to be kept at a minimum. Atomedic patients use disposable cellulose-fiber "linens" and disposable eating utensils. Frozen food, prepared elsewhere, is to be stored in the patient's own wall freezer and will be flipped on automatically, a meal at a time, from wall freezer to wall cooker.

Dr. MacGuire expects 50,000 Ato-

medic hospitals to be in use by 1972. "This will add up to 1,100,000 hospital beds—one for every 200 persons in the country."

A somewhat related approach — though it doesn't involve the supermarket concept—is being pursued at Newark, N. J., by Columbus Hospital. Its director of development, Dr. George Radcliffe, maintains that automation is the obvious answer to future problems.

"Key controls will be centered at the nursing station," says Dr. Radcliffe. "The chief nurse will have her television monitors, a printer for recording patients' temperature, pulse and respiration, an intercom system connected with each patient and with all hospital departments, and controls for corridor lights and for air conditioning."

Nursing Economy

Circular nursing units, such as the one described by Dr. Radcliffe, have been springing up all around the country ever since the end of World War II. The theory behind them is: If nurses and their equipment can be stationed at a point central to the patients they serve, travel time and energy can be cut to a minimum; and if the proportion of patients who can be seen from the station is increased, fewer trips presumably are necessary.

In theory, at least, doctors and nurses will be freed from making rounds as they do now. Instead, each patient's temperature, blood pressure, respiration and pulse will be monitored continuously by tiny buttons worn in the bed clothing, by finger rings and other miniature instruments. These will send a running report — every heartbeat, every breath—to a central switchboard and magnetic tape recorder. Any significant change will flash a warning light to the supervising nurse at master control.

Not everybody agrees that the idea is a good one. Some authorities are skeptical of widely publicized claims that round hospitals will "cut nurses' travel time by 37 per cent" or "reduce exterior walls by 32 per cent." One of the skeptics is Herbert P. McLaughlin of the Surgeon General's Medical Construction Liaison Office.

Architect McLaughlin tested such claims by designing both rectangular and circular units with approximately equal physical facilities. His finding: circular nursing units are vastly overrated. "Architects and hospital administrators should think twice before going around in circles."

That automation has its limits, however, is a point made by New York hospital architect, Isadore Rosenfield. "It used to be called 'mechanization' and we took it somewhat for granted. But now that it's more refined, we call it 'automation' and tend to think of it as a solution to everything. I think this is a dangerous trend. It's a violation of the human spirit to expect a machine to accomplish what man alone can often do so much better."

One architect who had a good deal to say about what the hospital of the future *should* be like, never got around to designing one while he was alive. Said Frank Lloyd Wright:

"Hospitals are usually much too large. A one-story building would be best; two stories should be the maximum."

Because he believed that "more people die of the hospital than of the disease they bring to it," Frank Lloyd Wright constructed this hospital in his mind's eye:

"Each building would be especially planned for privacy. Homelike quarters would be so arranged in them that no sick person need ever see another sick person, unless he so willed.

"The emphasis in the new hospital," Wright concluded, "should be on normality, not on the paraphernalia of abnormality. In short, the hospital of the future will be as humane in practical, esthetic effect as today's hospitals are humane in purpose." ■

WHAT'S WRONG WITH THE HOSPITAL OF TODAY?

In terms of care, construction and cost, it hasn't kept up with the times, says Ray Brown

Professor Brown, you have charged that American hospitals cling to an outdated tradition. Just what do you mean?

Hospitals were once intended chiefly for the poor who were not expected to pay. At that time, the hospital received its main support from gifts. Hospitals were forced to take in only the patients for whom a lot could be done in a hurry. The idea was that only the sickest, only those who needed the most care, were fit subjects for admission to the hospital. Though hospitals now serve all economic levels and are far more complex institutions, a good many of them, unfortunately, still hold to the old idea that their only obligation is to the short-term patient.

When did this begin to change?

Right after the turn of the century, I'd say, when medicine began to move rapidly ahead as a science. It was then that hospitals started congregating equipment and specialized medical talent as well as patients. This grouping of expensive gear and abilities is partly wasted, however, if it's concentrated on the short-term patient to the exclusion of others. It's my contention that we've got to make these facilities available to the patient whether he's in the hospital 24 minutes, 24 hours or 24 days. If we don't, the community will be put to the useless expense of duplicating facilities elsewhere for the long-term patient.

Can you give a specific example?

Take the patient who has had a stroke. Soon after he comes into the hospital he may be out of medical peril, but will

CONTINUED ON PAGE 30

PROF. BROWN, former president of the American Hospital Association, now heads University of Chicago Clinics.

WITH THE TIDE OF MEDICAL THINKING:

Concern about changing bacterial sensitivity

MADRIBON CONTROLS
EVEN SOME
ANTIBIOTIC-RESISTANT ORGANISMS

see: 1. E. H. Townsend, Jr. and A. Borgstedt, Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 64. 2. B. H. Leming, Jr., C. Flanigan, Jr. and B. R. Jennings, *Antibiotic Med. & Clin. Therapy, 6*:(Suppl. 1), 32, 1959. 3. P. Buenger (Medical Department, Heidberg General Hospital, Langenhorn, Hamburg, Germany), paper presented at the International Congress of Infectious Pathology, Milan, Italy, May 6-10, 1959. 4. M. J. Mosely, Jr., *J. Nat. M. A., 51*:258, 1959. 5. S. M. Finegold, Z. Kudinoff, H. O. Kendall and V. E. Kvinge, *Ann. New York Acad. Sc., 82*:(Art. 1), 44, 1959. 6. G. A. Moore, *ibid.*, p. 61. 7. M. Sierp and J. W. Draper, *ibid.*, p. 92. 8. G. Carroll, Discussant, *ibid.*, p. 110. 9. B. Khosrovani, M. Wertz and C. J. Jenkins, Jr., *Curr. Therap. Res., 2*:442, 1960. 10. V. A. Renzi, *M. Times, 88*:1042, 1960. 11. G. Nunnelly, *J.A.M.A., 173*:1029, 1960. 12. C. C. Carpenter, *Clin. Med., 7*:2593, 1960. 13. H. Glanzmann, *Muenchen. med. Wchnschr., 102*:2467, 1960.

WITH THE TIDE OF MEDICAL THINKING:

Concern about safety and tolerance

MADRIBON HAS ACCUMULATED
A SAFETY RECORD
UNSURPASSED BY ANY ANTIBIOTIC
OR ANTIBACTERIAL AGENT

see: 1. S. Guss and A. J. Spiro, *Pediatric Conferences, 2*:14, 1959. 2. B. H. Leming, Jr., C. Flanigan, Jr. and B. R. Jennings, *Antibiotic Med. & Clin. Therapy, 6*:(Suppl. 1), 32, 1959. 3. W. A. Leff, *ibid.*, p. 44. 4. M. J. Mosely, Jr., *J. Nat. M. A., 51*:258, 1959. 5. R. E. Bagdon, L. O. Randall and W. A. Leff, *Ann. New York Acad. Sc., 82*:(Art. 1), 3, 1959. 6. A. E. Thill, *Pennsylvania M. J., 62*:1534, 1959. 7. H. B. Barner, *Antibiotic Med. & Clin. Therapy, 7*:426, 1960. 8. J. B. Christodoulopoulos and A. P. Klotz, *Am. J. Gastroenterol., 34*:433, 1960. 9. G. Nunnelly, *J.A.M.A., 173*:1020, 1960. 10. V. A. Renzi, *M. Times, 88*:1042, 1960. 11. D. Wheatley, *Practitioner, 185*:89, 1960. 12. W. C. Grater, *Texas J. Med., 56*:920, 1960. 13. S. F. Horne, *M. Times, 89*:401, 1961.

WITH THE TIDE OF MEDICAL THINKING:

Concern about economy and ease of therapy

MADRIBON IS KIND TO
THE PURSE; NEED BE GIVEN
ONLY ONCE A DAY

see: 1. B. H. Leming, Jr., C. Flanigan, Jr. and B. R. Jennings, *Antibiotic Med. & Clin. Therapy*, *6*:(Suppl. 1), 32, 1959. 2. J. D. Young, Jr., W. S. Kiser and O. C. Beyer, *ibid.*, p. 53. 3. S. Guss and A. J. Spiro, *Pediatric Conferences*, *2*:14, 1959. 4. M. J. Mosely, Jr., *J. Nat. M.A.*, *51*:258, 1959. 5. J. C. Elia, *Ann. New York Acad. Sc.*, *82*:(Art. 1), 52, 1959. 6. L. E. Skinner, *ibid.*, p. 57. 7. G. A. Moore, *ibid.*, p. 61. 8. G. D. LaVeck, F. de la Cruz and J. Kirschvink, *Antibiotic Med. & Clin. Therapy*, *7*:119, 1960. 9. J. C. Elia, *Mil. Med.*, *125*:258, 1960. 10. J. B. Christodoulopoulos and A. P. Klotz, *Am. J. Gastroenterol.*, *34*:433, 1960. 11. J. R. Caldwell, *M. World*, *93*:220, 1960. 12. W. C. Grater, *Texas J. Med.*, *56*:920, 1960. 13. L. S. Persun, Jr., *West. Med.*, *1*:12, 1960.

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PROF. BROWN CONTINUED

still need the equipment and qualified technicians only the hospital can provide. But, once his condition has stabilized, the stroke patient is usually discharged—either sent home or to a nursing home. Is it playing fair to deny the long-term patient access to the same equipment and personnel the short-term patient uses?

Can't the progressive patient care plan be used to advantage here?

In some of the smaller hospitals, perhaps. But to date no more than 100 institutions have gone ahead with plans for dividing patients on the basis of care requirements rather than physical condition.

Isn't progressive care supposed to bring costs down?

It certainly hasn't reduced expenses at any of the hospitals that have tried it. On the contrary, it has increased them. But it's only fair to point out that this is because it has delivered a higher level of care due to additional staffing on intensive care floors.

Despite such problems, isn't the fragmentation of medical service more or less inevitable today?

Perhaps it only seems to be inevitable. But I'll admit that right now service to the patient is broken in bits and pieces in every hospital in every part of the country. I don't know of a single community that has centered responsibility for the total needs of the patient in one place.

We need bigger hospitals, then?

Without question we need more space for personnel and equipment. But we won't necessarily need more beds. Hospitals will get bigger because they will bring in more heart-lung machines, more diagnostic equipment and more laboratory equipment.

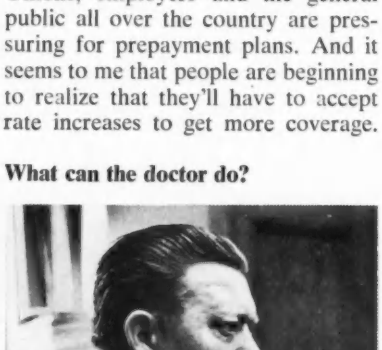
So you're in favor of the supra-hospital concept?

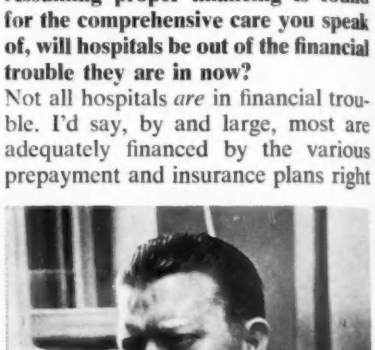
I certainly am. Why, for example, should nursing homes be spread all over a city, divided up into small inefficient units as they are now? I'd like to see them adjacent to, or made a part of, the general hospital complex. But all of this can be brought about only through the right kind of financing. And this means that the prepayment plans will have to start covering long-term illness, nursing-home care and out-patient care.

Can a start be made now?

I think a start has already been made. Unions, employers and the general public all over the country are pressuring for prepayment plans. And it seems to me that people are beginning to realize that they'll have to accept rate increases to get more coverage.

What can the doctor do?





PROF. BROWN: By centralizing facilities, the doctor's life would be much simpler.

He can convince himself, his hospital and his patients that expanded prepayment will add up to better service.

What if voluntary financing fails?

The only alternative is help from the Government. The growing number of older citizens—those most liable to long-term illnesses — will insist that that Government step in to provide the proper financing.

Isn't such intervention pretty far off?

Perhaps not so far off as some people think. If anything is done about prepayment at the Federal level—some variation on the Kerr-Mills law—it could take shape in a very big hurry.

But isn't the Government already helping to build hospitals?

Yes, that's true. But money for construction isn't really the problem these days. The Hill-Burton Act, for example, has been helping build voluntary hospitals for 12 years now. And the same law provides for nursing-home construction, too. The real problem is day-to-day operating expense. Hospitals spend about as much every two years on operating costs as they spent originally to put up the building. How to find the money to pay for the care rendered in the beds we already have—that's the heart of the matter.

Assuming proper financing is found for the comprehensive care you speak of, will hospitals be out of the financial trouble they are in now?

Not all hospitals *are* in financial trouble. I'd say, by and large, most are adequately financed by the various prepayment and insurance plans right now—adequately financed as far as acute short-term care is concerned. But when hospitals try to provide long-term care they invariably run into trouble. Hospitals are then getting into the area of custodial care.

And there are other drains on a hospital's resources?

Of course. The free care they give, for example. And Government payments for the care given indigent patients is often woefully inadequate.

But with your everything-under-one-roof idea, you feel operating costs could be brought into line?

Most doctors know it's pretty inefficient to have to travel between the hospital and various nursing homes every day. Centralizing their work would make it simpler for them.

Take the chronic disease unit we're building here at the University of Chicago Clinics. Planned for the long-term patient and his lesser needs, it will still provide access to the same doctors and equipment the short-term patient uses. With everything the patient needs close at hand, we'll cut our operating expenses considerably. ■

FUNGAL AGENTS LYSE BLOOD CLOTS

Clinical trials in progress with thrombolytic obtained from plant pathogen suggest it may overcome toxicity and other problems associated with bovine and bacterial enzymes

Fungi, which have enriched the pharmacopoeia with penicillin and a dozen other antibiotics, may prove to be an equally copious source of thrombolytic agents.

A proteolytic enzyme derived from a vegetable pathogen—rather than an animal source — is now undergoing clinical trials by researchers at Tufts University. And another enzyme, obtained from a soil fungus, has demonstrated potent thrombolytic activity *in vitro,* according to a St. John's University investigator.

The proteolytic activity of fungi is no new discovery. As early as 1918, a young investigator named Selman Waksman reported that soil fungi and Actinomyces can lyse blood clots. But until recently, the antibiotics produced by fungi overshadowed their thrombolytic properties.

Seeking new approaches to thrombolysis, Tufts hematologists Mario Stefanini and Hector M. Marin turned to *Aspergillus oryzae,* a parasite of the rice plant. Test-tube trials proved its lytic activity. Animal experiments with a purified filtrate—called Aspergillin O—established its effectiveness *in vivo.* They also showed that heparin must be administered with it, in order to prevent clot reformation.

First Clinical Trials

Dr. Stefanini and another associate, supported by the American Heart Association, then carried out a preliminary treatment and toxicity study on 18 cerebrovascular accident and terminal cancer patients. The thrombotic patients improved, some regained lost sight. None of the patients showed any toxic symptoms or allergic reactions and leucocyte counts were unaffected. Further tests involving 37 cancer patients appear to have confirmed these findings, they add.

A much larger study, involving 48 patients with a wide variety of vascular occlusions, is now in progress. While the results still await full analysis, Dr. Stefanini's "clinical impression" is that three-quarters of the patients have benefited.

The Tufts investigators have been using doses of 7 to 10 mg of Aspergillin O plus 1 mg of heparin per kilogram of body weight. At these dosages, the drug shows none of the pyrogenecity sometimes associated with the bacterial thrombolytic, streptokinase.

The drug also appears to possess advantages over the plasmin class of thrombolytics, in that its clot-dissolving strength stays constant from batch to batch, Dr. Stefanini points out.

Its mode of action seems to resemble that of streptokinase and similar substances, according to the Tufts researchers. While it fails to affect platelet count and serum levels of plasminogen, proactivator or antiplasmin, it decreases the fibrinogen level and the activity of prothrombin and factor V. Another resemblance is a transient shortening of clotting time.

Dr. Stefanini notes that the drug can attack the coagulation mechanism both before and after fibrin formation. In addition to lysing existing fibrin, it depresses fibrinogenesis by lowering the speed and yield of thrombin production. The enzyme, not available commercially, is produced by Connaught Laboratories, of the University of Toronto.

The second new fungal fibrinolytic agent has been discovered by Dr. Michael A. Pisano, St. John's University biologist, in filtrates of the soil organism *Paecilomyces persicinus.* While studies of the subject have not advanced beyond the test-tube stage, its lytic activity appears to be "potent," he told the annual meeting of the American Institute for Biological Sciences, at Purdue University.

A Versatile Fungus

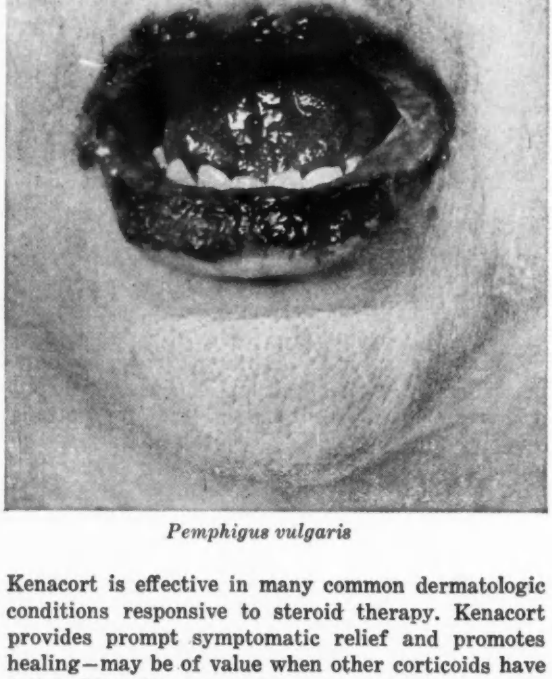
Within 12 hours, he finds, 0.5 cc of filtrate will lyse more than a quarter of a two-day-old clot one inch high and one-half inch in diameter. And he expects that purified preparations will show even stronger activity.

In addition to fibrinolysis, the filtrate also shows anticoagulant properties, the St. John's investigator declares. This effect may be due to digestion of microscopic strands of fibrin as soon as they are formed. But "it is just as likely that it contains a separate anti-coagulant substance."

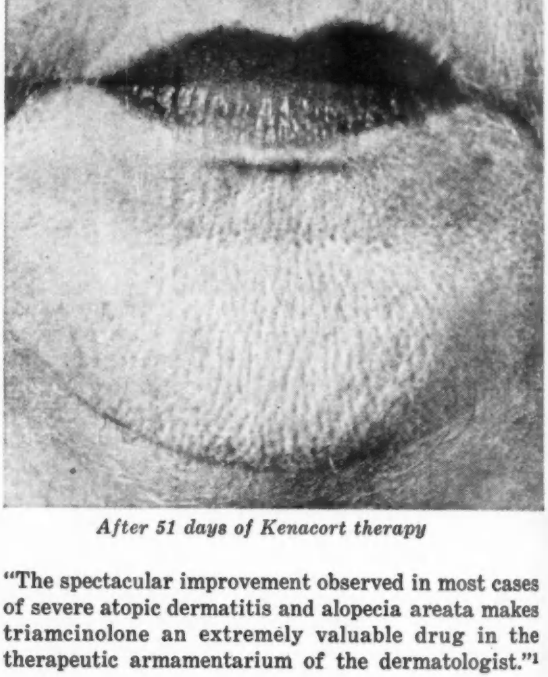
Nor does the versatile fungus stop there. It also synthesizes an antibiotic —synnematin B—now under investigation in U.S and British laboratories. And by growing the organism in different media, it can be teased into producing other enzymes for potential medical or pharmaceutical use—beta glucosaminadase which digests bacterial cell-walls, and enzymes which degrade casein, liquify gelatin, clot milk and digest starch. ■

DR. PISANO reports on fungus which produces both an antibiotic and a fibrinolytic.

SKIN DISORDERS RESPONSIVE TO TRIAMCINOLONE



Pemphigus vulgaris



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Kenacort is effective in many common dermatologic conditions responsive to steroid therapy. Kenacort provides prompt symptomatic relief and promotes healing—may be of value when other corticoids have failed. With Kenacort, there are virtually no mood changes, edema, sodium or water retention, or secondary hypertension; and there is far less gastrointestinal distress than is generally encountered with other corticoids.

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"The spectacular improvement observed in most cases of severe atopic dermatitis and alopecia areata makes triamcinolone an extremely valuable drug in the therapeutic armamentarium of the dermatologist."[1]

"...highly effective in the management of a variety of eczematous dermatoses...useful in the management of erythema multiforme and subacute lupus erythematosus."[2]

"Triamcinolone was preferred in cases of arthritis with psoriasis because of an exceptional ability to clear the skin."[3]

References: **1. Edelstein, A J.: Pennsylvania M. J. *62*:1831 (Dec.) 1959. 2. Smith, J. G., Jr.; Engel, M. F.; and Blank, H.: J. Florida M. A. *46*:960 (Feb.) 1960. 3. Robins, H. M.: New York J. Med. *61*:717 (Mar. 1) 1961.**

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WET FILM TECHNIQUE IMPROVES DIAGNOSIS OF LUNG CANCER

The "wet film" method is a simple technique for detecting carcinoma of the lung that provides a larger quantity and better quality of cells than other methods employed. Cells are obtained during bronchoscopic examination by means of a long applicator with an attached saline-moistened cotton pledget which is used to swab any suspicious-looking lesion. Cells from the pledget are titrated in a staining solution on glass slides which are then covered with glass coverslips and examined microscopically.

This method provides greater clarity of cellular detail than any other available. Nuclear detail is also better; chromatin patterns and prominent nucleoli seen in malignant tumors can be easily recognized.

Although it takes several minutes to prepare slides by this method, the time required is insignificant when compared with that necessary to process several specimens of sputa.

The wet film method has given almost twice as many positive diagnoses as biopsy and was correct in more than 98 per cent of cases. Results in slightly less than two per cent were false positive. *McCormack et al; Cancer, Sept.-Oct. 1961, pp. 1139-43.*

LIVER TUMORS IN CHILDREN ARE FREQUENTLY MALIGNANT

Primary liver tumors in children are usually malignant, appear before the second year of life and are seldom curable. The most common type is hepatoma. Development of abdominal enlargement and a palpable mass is frequently the initial complaint. Fever and weight loss characterize late cases, but jaundice is rare. X-ray examination is the best means of diagnosis. Laboratory tests do not add much information.

The only adequate therapy for primary hepatic tumors at the present time is surgery. Right or left lobectomy can be done with reasonable safety and without serious risk of hemorrhage, air embolism, bile peritonitis or liver failure.

Radiation therapy may be of value in inoperable hepatic carcinoma. In very high doses—6,000 to 6,500 r given as rapidly as can be tolerated—it may shrink the tumor dramatically but no hepatic cell tumors or pulmonary metastases have been eradicated by radiation treatment. *Clatworthy, Boles and Kottmeier; Ann. Surg., Sept. 1961, pp. 475-80.*

PERSONALITY AFFECTS RECOVERY FROM INFECTIOUS DISEASE

People who have a propensity to become depressed seem to have a longer convalescence from acute infectious disease than others.

This is the conclusion suggested by a study of patients given psychologic tests prior to an attack of Asian influenza. When they were examined again after recovery they could be divided into two groups; those who recovered promptly and those who had persistent symptoms for three or more weeks after the acute illness. Because the disease was similar in both groups, the character and severity of the infection could not be considered a contributing factor in length of recovery. The psychologic data, however, revealed an interesting difference. The symptomatic group had significantly higher scores for depressive tendencies than the other. Slower recovery also appeared to be related to age.

Several other studies of patients convalescing from infectious disease tend to confirm the finding that personality and emotional disturbances contribute to the persistence of subjective symptoms. In general, convalescent patients are apt to attribute their continued lack of well-being to persistence of the physical disease, possibly because this interpretation carries the least threat to their sense of self-esteem. *Imboden, Canter and Cluff; AMA Arch. Int. Med., Sept. 1961, pp. 55-61.*

ABUSE OF X-RAY THERAPY MAY FORCE MORE REGULATION

One of the most preventable of serious diseases is atrophy of the skin induced by x-ray treatment of benign dermatoses. It causes an irretrievable acceleration of tissue death, leaving the skin highly vulnerable to every type of physical and chemical assault, and malignant change.

X-ray atrophy is caused by overdosage and careless routine use of x-ray therapy. In benign dermatoses, 500 r is the maximum total dose that should be given. Grenz rays will produce as good results in many dermatoses as superficial x-rays, with less risk of late sequelae. Some conditions which should not be treated by x-ray are acne, acute contact dermatitis, keloids, herpes simplex, herpes zoster, warts, ringworm infections and hemangiomas of the port-wine stain or cavernous type. X-ray therapy of psoriasis and chronic eczematous dermatitis is unpredictable.

Although the trend is toward less and more conservative x-ray therapy in benign skin conditions, cases of late skin atrophy and x-ray induced cancer continue to turn up. Unless the misuse of this equipment ceases, regulation may be forced on the medical profession by outside authorities. *Pillsbury; Postgrad. Med., Sept. 1961, pp. 180-87.*

REFRACTION TIME OF THREE CYCLOPLEGICS COMPARED

In most ophthalmologists' offices, refractions are performed approximately 40 to 60 minutes after instillation of the cycloplegic drug. This is done partly because the cycloplegic drugs in common use take about an hour to become effective.

A new drug recently introduced into this country, tropicamide, is effective within 20 minutes and cycloplegia lasts for about 15 minutes. Recovery of accommodation is rapid and patients can usually read fine print within a few hours. Its duration of effectiveness is quite short, however, compared with cyclopentolate and homotropine. With cyclopentolate, refractions can be done between 30 minutes and an hour and a half after instillation. And it is more consistent in its effectiveness than tropicamide. Recovery from cycloplegia may take from six to 24 hours. Homotropine does not produce adequate cycloplegia until almost an hour after instillation but it lasts for almost two hours. Recovery of normal accomodation may take 36 to 48 hours. None of the drugs seem to produce any side effects and all are useful for refractions if their time limits are kept in mind. *Gettes and Belmont; AMA Arch. Ophthal., Sept. 1961, pp. 56-60.*

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In the 1001 emergency situations of daily practice and in the hospital emergency room when immediate calming is required for anxious, agitated, restless, confused, disoriented, obstreperous, protesting or panicky patients—Librium Injectable—in situations ranging from accident cases to tragic life events; from behavior crises to emotional crises; from alcoholic DT's and hallucinosis to drug withdrawal or postconvulsive reactions; from upsetting diagnostic procedures to pre- and postoperative states.

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DOCTOR'S BUSINESS

A simplified income tax form will be ready in time for filing 1961 returns, but doctors will probably find the job of tax reporting as complicated as ever. Many situations aren't covered in the new two-page form. Entertainment and professional traveling expenses, for example, must be listed on form 2106, two pages. The sale of one house and the purchase of another takes form 2119, two pages. Receipt of more than three salaries calls for form 2836, another two pages. Operation of a small additional business requires Schedule C, four pages, and Schedule SE, one page. And, of course, there is the standard one-page form 1040-ES for declaring the estimated tax for 1962.

Doctors bound for Europe by air can now convert U. S. dollars into foreign currency at the touch of a button. At New York's Idlewild Airport, Sabena Airlines has installed machines that exchange $4.70 worth of francs, lire, marks or pounds for a $5 bill. The whole transaction takes less than a minute. Travelers put a $5 bill into one of the machines and press two buttons—one to select the currency desired, the other to receive the money. Similar machines are to be put in service soon at other international airports.

Many of the lawsuits in which MD-substitution is the central issue involve obstetrical cases. Say AMA legal experts: "The physician should obtain, if possible, the written consent of the patient to a substitution" if the doctor feels he may be unable to attend the case himself. Another tip from the AMA medicolegal staff: "The OB specialist is best advised to recommend either another OB specialist—or at least a family practitioner who devotes a substantial part of his practice to obstetrical cases."

Nearly a million Americans are now in the $10,000-a-year-or-better income tax bracket. (MDs average about $17,300 a year.) And Treasury Department figures show that more than 900,000 taxpayers moved up to this category between 1958 and 1959, the last year that complete figures are available. High men on the income tax totem pole are some 280 Americans who reported adjusted gross incomes of $1 million or more for 1959. Together they paid the Government some $267 million in taxes.

Cash dividends paid to physicians owning common stock helped swell the record-high total paid out during the first half of the year. First-half dividends edged up two per cent to $4.9 billion from $4.8 billion in the first half of 1960. Utilities led the industrials with a 6.7 per cent increase in dividends. Amusement issues were up five per cent, financial 4.9 per cent and publishing 4.7 per cent.

Plans for socialized medicine in the Canadian province of Saskatchewan may not materialize after all. Drought on the prairies has cut tax revenues and raised the number of welfare payments. Local doctors, meantime, are pushing for government subsidy of the voluntary medical care programs already in existence. It's estimated that the 40 per cent of the population not presently covered could be brought in, at a cost of $3.5 million a year. In contrast, the plan for socialized medicine would cost an estimated $20 to $25 million a year. Now, hard times are winning converts to the MDs position.

Which industries have the best growth possibilities in the next five years? The nation's security analysts, answering a poll, list as the most attractive: electrical and office equipment, electronics and pharmaceuticals. The least attractive industries, in their opinion: railroads, automotive, steel, nonferrous metals and rubber. In a similar poll taken just three years ago, only 15 per cent of the analysts characterized the telephone and telegraph industry a growth field, now 48 per cent rate it favorably. Food processing and baking also improved their growth ratings with the analysts.

A tax rule doctor-investors will want to note has been issued by the Internal Revenue Service. Taxpayers buying a stock in different lots and at different prices must now keep a record of the date and price at which the shares were acquired. This means getting the broker's written confirmation of each transaction. Then when any part of an investor's holdings are sold, the Service points out, he will be able to substantiate the money gained or lost by identifying the lot involved in the sale. Says the IRS: "Investors cannot use the average price of various lots to compute gain or loss for income tax purposes."

(Advertisement)

LEDERLE MEETS EMERGENCIES

As a leader in the pharmaceutical industry, Lederle often shares the burden, when emergencies arise, of supplying physicians and aiding individuals in need. At Lederle, an emergency service – geared to supply drugs quickly and efficiently in distress situations–responds almost daily to appeals from the entire free world. In these cases, Lederle defrays the expense of extraordinary delivery and often the cost of the drug itself.

IN NATIONAL DISASTERS In major disasters, rapid replacement of damaged or lost drugstore and hospital stocks, plus supplies of typhoid vaccine and other biologicals, are critically needed to forestall epidemics. After Hurricane Diane in 1955, to get medical supplies to flooded sections of Connecticut, Lederle organized an airlift of small planes to fly drugs directly to stricken areas.

AND ABROAD When two catastrophic earthquakes virtually destroyed the city of Agadir in Morocco, rescue/relief teams and medical supplies were immediately mobilized all over the world. An emergency shipment of Lederle antibiotics and other medicines was sent aboard a special flight from New York. The shipment, valued at $12,000, was donated by Lederle.

In May, 1960, Lederle supplied Gas Gangrene Antitoxin to stricken Chile following the tragic series of earthquakes. Other emergencies involving smallpox and trachoma epidemics have been similarly supplied.

IN PERSONAL CRISES When dinner in western U. S. A. ended in botulinus poisoning for six members of a family, Lederle supplied antitoxin from its 13 depots around the country. At the Pearl River laboratories, technicians packaged nearly all the remaining Botulism Antitoxin in the country – a total of 139 vials – for jet shipment. This rapid, coordinated action is credited with helping doctors save three of the victims. As stated by Representative H. H. Budge (Idaho) in the Congressional Record (Vol. 105, No. 140, August, 1959), "Lederle Laboratories did a most generous and kindly deed when it cancelled out a $7,825 bill for the antitoxin and also paid the air freight costs..."

WITH SPECIAL FACILITIES Extensive facilities—much larger than those required to meet normal needs—are devoted to preparing and maintaining stocks of many Lederle antisera, antitoxins, vaccines and other biologicals.

These drugs are so specialized, and have such short shelf life, that they often cannot economically be stocked by hospitals and pharmacies.

Many bottles are never used and must continually be replaced when out-dated . . . to be ready for the unpredictable emergency.

AND SPECIAL SERVICE Lederle service in an emergency is available on a round-the-clock basis. Packers, traffic experts, drivers, even pilots, are alerted by a standard plan for answering distress calls. These are some of the activities maintained by Lederle and the pharmaceutical industry to serve the nation and the free world.

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6P 18

Product News

FOR ATHLETE'S FOOT

Advicin (Schering), a combination of salicylic acid, diphemanil methylsulfate and undecylenic acid, is a topical fungicide recommended for use with oral *Fulvicin* (griseofulvin) in the treatment of athlete's foot. Clinical studies have shown that the combined therapy is more effective than *Fulvicin* alone in this condition. *Advicin* tends to eliminate perspiration and helps to prevent itching, burning and sweat-induced irritations. It can be applied to parts of the body other than the feet, but it should not be used on the scalp, mucous membranes or large open lesions.

IN HYPOPROTHROMBINEMIA

Mono-Kay (phytonadione, Abbott), synthetic vitamin K_1, is indicated in the prophylaxis and treatment of hypoprothrombinemia occurring in the neonatal period, as a result of oral anticoagulant therapy, in conditions that cause malabsorption of vitamin K, after prolonged administration of prothrombin - depressing drugs and preoperatively to avoid hemorrhage.

Mono-Kay is not recommended for treatment of hemorrhagic diseases accompanied by normal prothrombin levels or for control of hemorrhage following use of heparin. Dosage and administration vary with the type of condition and severity of each case.

FOR DERMATOSES

Cordran (flurandrenolone, Lilly), a topical corticosteroid for the symptomatic treatment of dermatitis, pruritus and eczema, is available in both cream and ointment form, and in combination with neomycin as *Cordran-N*. The ointment should be used for dry scaly lesions, the cream for moist weeping lesions. *Cordran-N* is recommended when lesions are infected.

Each gram of *Cordran* contains 0.5 mg flurandrenolone. Each gram of *Cordran-N* contains the same concentration of flurandrenolone plus 5 mg neomycin sulfate.

Cordran is recommended as a supplement, not a substitute, for other therapy. It should not be used in the presence of tuberculosis of the skin. No side effects have been reported, but if sensitivity occurs, treatment should be discontinued.

Names in the News

Dr. Francis D. Moore, professor of surgery at the Harvard Medical School and surgeon-in-chief at Peter Bent Brigham Hospital, Boston, received an honorary degree of Master of Surgery from the National University of Ireland during the biennial meeting of the International Society for Surgery, held in Dublin.

Dr. Howard Albright, formerly director of clinical research of Bristol Laboratories, has been appointed director of clinical research for Lakeside Laboratories, Inc.

Dr. Frits W. Went, director of the Missouri Botanical Garden, St. Louis, and a specialist in environmental influences on plant growth, was elected president of the American Institute of Biological Sciences at its meeting in Lafayette, Ind.

Dr. James A. Fancher, a biochemist and former research associate with The Upjohn Company, has been named a member of the research laboratories of the Albert Einstein Medical Center, Philadelphia. He will conduct a five-year investigation into "the abnormalities of mucus secretion in patients with cystic fibrosis."

The American Cancer Society announced a grant to the University of Kansas School of Medicine to support the research of **Dr. John Higginson** in the field of geographical pathology.

Dr. Franklin D. Yoder, previously head of the division of environmental health at the AMA, appointed director of the Illinois department of health.

Three leading surgeons at the Yale School of Medicine have been promoted to full professor. **Drs. William W. L. Glenn** and **Mark A. Hayes** have been named professors of surgery in the department of surgery, and **Dr. John M. Morris** has been promoted to professor of gynecology in the department of obstetrics and gynecology.

During the annual meeting of the American Hospital Association, seven persons are being honored for outstanding contributions to the health and hospital fields. They are: **Ralph W. Burger,** president of the Hartford Foundation; **Dean Conley,** executive director of the American College of Hospital Administrators; **Dr. Jack R. Ewalt,** superintendent of the Massachusetts Mental Health Center, Boston; **Harold Hillenbrand,** DDS, secretary of the American Dental Association; **Miss Doris Gleason,** executive director of the American Association of Medical Record Librarians; **Dr. George E. Godber,** chief medical officer of the British Ministry of Health; and **Dr. Luther L. Terry,** Surgeon General, U.S. Public Health Service.

Albert V. Whitehall, director of health insurance for the Life Insurance Association of America and vice-chairman of the Health Insurance Council, has been appointed executive director of the American Society of Internal Medicine, San Francisco.

Dr. Maurice Levine, medical director of Michael Reese Hospital and Medical Center, Chicago, since 1950, is retiring at the end of this year. Dr. Levine has been largely responsible for the expansion of Michael Reese, now the largest private teaching hospital in Chicago.

Dr. Lawrence Marks, formerly an assistant surgeon with the U.S. Public Health Service and a resident in internal medicine with the Veterans Administration Hospital in East Orange, N. J., has been appointed to the staff of the Squibb Institute for Medical Research.

OBITUARIES

Dr. William Henry Lipman, 85, retired medical director of Swift & Co.; he pioneered in industrial medicine, employee benefits and hospital plans at the meat packing company; Aug. 26, in Chicago.

Dr. Willard Van Hazel, 65, clinical professor of surgery at the University of Illinois College of Medicine and senior attending thoracic surgeon at Presbyterian-St. Luke's Hospital, Chicago; of a heart attack, Aug. 24.

Dr. Joseph M. Hountha, 74, retired New Orleans surgeon; he served on the Hotel Dieu and Charity Hospital surgical staffs and was chief surgical consultant at the New Orleans office of the Veterans Administration; in New Orleans.

Dr. Henrietta Tienken, 89, first medical director of the National Biscuit Company (1904); later, as a private physician she never sent anyone a bill, feeling that she would rather have her patients be able to pay for their medicine than for her services; of pneumonia, Aug. 13, in New York City.

Dr. Warren Lloyd Lewis, 101, the oldest graduate of Jefferson Medical College (class of '82) and a GP for 67 years; Sept. 8, in Salem, N. J.

Dr. J. Elmer Porter, 96, second oldest graduate of Jefferson Medical College and a GP for 64 years; Sept. 8, in Philadelphia.

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THE CHANGING ROLE OF THE MODERN HOSPITAL

Morris Fishbein, M.D.

Changes in doctors' offices, hospitals, research and other institutions have accompanied changes in medical practice. This was the theme of a recent congress in Venice that attracted more than 1,200 administrators, doctors, nurses, architects and engineers from 42 countries.

A Netherlands institution expert noted this increasing rate of change in hospitals, and called particular attention to the shifting emphasis from bed space to working space, and the influence of specialization in the care of the patient. Formerly, a hospital was principally a place in which the sick could be housed. Nowadays, the space required for laboratories, treatment facilities, outpatient departments, physical medicine, x-ray, kitchens, recovery rooms and other ancillary services is being constantly expanded. The bed is no longer the central and essential element of the hospital.

The Amsterdam official noted also the gradual disappearance of the specialized hospital, with only children's hospitals and mental hospitals remaining. And hospitals devoted to a single organ or a single system of the body are progressively disappearing, too.

Needs of Long-Term Patients

At the same congress, Professor Ray E. Brown, superintendent of the University of Chicago Clinics, warned that hospitals should conserve their resources to care for the long-term patient, whose needs are as essential both in number and quality as the short-term patient's. (For details of Prof. Brown's views, see p. 27).

In an address to a group of hospital experts in London, Mr. Gordon A. Friesen, a Washington, D. C. hospital consultant, observed that more care should be given to the *design* of hospitals. It does not matter whether a hospital is round, square or rectangular, the essential point, he said, is not to build first and then adjust the organization to suit the building. Mr. Friesen observed that at least half of the nurses' time in most hospitals is spent running back and forth collecting supplies. As an example, he cited a sheet which was handled 16 times between the ironingboard and the bedside. "We spent more money worrying about accounting for the sheet," he said, "than it would cost to replace the sheet if it were lost." He said, also, that cafeterias should be circular to avoid lengthy queuing and that furniture should be designed for the places in which it is to be used. He concluded saying: "By the time a modern hospital is built, it is already 20 years behind the times."

A Tip from Industry

In its comment on Mr. Friesen's proposals, *The Lancet* took the side of conservatism, with the excuse that a certain amount of repetitive work is not without value. The young student nurse, for instance, may find herself nursing the sick under conditions where all of the modern accomplishments of construction are not available.

Hospitals, I believe, require the kind of time and motion studies that are used in industry. In the United States, 70 per cent of the operating cost of the hospital is for salaries and wages, contrasted with 60 per cent in Great Britain, and in both countries a rise in these costs is anticipated for many years to come.

Morris Fishbein